

The Economic Caesura

“I believe that most theoreticians would claim that a good economic theory is concerned with the interesting results in the models in which all the factors are engaged into an individual behavior of maximization.”

George A. Akerlof

The present crisis has highlighted the weak consistency of the symbolic economy's function, especially when it tried to legitimize phenomena that lie outside the production function's determinant sphere of meaning. The consequence most evident is the self-stimulating pressure for profit. The symbolic economy frenetically invents its performance algorithms counting on the hypothesis of that which could be called exclusive sufficiency. Fictitious money – in its extremely various technical expressions – constitutes the unlimited substance of success sought by the symbolic economy.

In this formula, practically the symbolic economy – particularly in its stock-exchange guise – introduces a total caesura with the production function, generating its own universe of value-creation.

Up to this level of understanding things do not yet seem to digress from the logic of Economics. For as long as the centering of the symbolic economy – on maximizing efficiency – is similar to that of the real economy, the problem of consistency is almost irrelevant. However, reality evolved in a direction in which logic stagnates. Going into the red is for the symbolic economy a state which annuls its propensity for autonomy from the real economy, in general, and from its public side, in particular.

The financial crisis, by means of stock exchange transactions, indirectly affects the real economy, through the drop in the value of stocks, while directly affecting the banking establishment of the symbolic economy, both through the marking of accumulated toxic assets and the avalanche of bad credit. The banking system is catastrophically hit by generalized panic; the solution to the losses problem no longer sits with its own mechanisms. The only thing left to do for the philosophy of exclusive sufficiency is to reveal the apocalypse. The only way to avoid collapse is for the function of the symbolic economy to join the determinant significance of the specific behaviors of the production function.

Public economy, in its own interpretation of the expression of social finality served by the function of the real economy, offers the support for the recovery of the symbolic economy – and above all the recovery of the commercial banking sector, the one most affected. In this way what seemed to be the right to the self-determination of value for the symbolic economy required – due to the danger of collapse – the activation of the real economy's appeal for solidarity. The injection of real money becomes the logical answer to the hectic behavior of fictitious money. But it is also the swift punitive action of the real economy's enlargement of the inter-functional space by the symbolic economy.

The crisis reveals the fact that in both reality and theory, as well as in the functional framework they create, catastrophes cannot be avoided when rifts are being exaggerated. A theory which aims at provoking a different theory to the objective one, even if it is supported by noble goals, will more readily lead to failure. A reality which defies the referentials of balanced explicative models of a scientific nature ends in recession. The consistency of social theories and the functionality of societal systems cannot be thought of and treated separately but with the risk of accepting false hypotheses and critical results as parameters of performance.

In the case of the symbolic economy, through neomonetarism, the complete independence of monetary function from the conditionalities of value carriers specific to the production function is an accepted hypothesis. The error of understanding lies in a mental formula of an extensive nature, through which an experiment of political immunization – such as the independence of central banks – is cloned for all the components of the symbolic economy. However, the abusive interpretation is fatal because it simply mixes the plans, eliminates logic, changes the basic rules, operates on assumptions, replaces the real universe with the virtual one, falsifies the essence of rationality calculations, comes into contradiction with the laws of physics, symmetry, determinism, entropy etc. Aspects which are not possible when independence is limited just to the authority of the central bank.

The autonomizing of the symbolic economy on reasons of efficient super-performance, on one side, and on the argument of the transforming of speculation into an infallible wealth producing mechanism, on the other side, besides the fact that it makes derisory the rules of prevalence in any economic system, it institutes a formula for creating imbalances whose effect is the undermining of the functioning of societal systems.

When the world of money becomes self-sufficient this breaks the symmetry of the architecture of humanity, the one between necessities and possibilities, aspirations and discernment, rights and responsibilities, costs and effects etc.

Marin Dinu

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The Role of Stress-test Scenarios in Risk Management Activities and in the Avoidance of a New Crisis

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Abstract. *Stress-tests can increase the endurance of banks and financial system when faced with crises especially during economic growth periods, when they may accept higher risks more easily and with lower prices. Their importance was revealed by the crisis which has proven to be much more severe in terms of amplitude than the worst scenarios used by banks.*

The case study presented assessed the impact that the deterioration of the main macroeconomic indicators might have upon a bank's exposure to credit, FX, liquidity, interest, operational and market risks, upon its capital requirements, provisions and the balance sheet.

Keywords: stress-test; financial crisis; risk management; capital requirements; provisions.

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1. Introduction

Stress-test exercises represent assessments of a bank's financial status when faced with the occurrence of a/several severe (yet plausible) risk events which might affect its financial performance, capital volume and even existence (Bank of International Settlements, 2009).

We believe that the main role of crisis simulations (stress-tests) stems from the fact that they may increase the endurance of banks and of the financial system when faced with financial crises.

Therefore, we feel that the periodic application of stress-test scenarios should be an important risk management instrument warning against unexpected results afferent to the emergence of various types of risks and providing an assessment of the volume of capital necessary to cover the losses that occurred in this context. Consequently, stress test scenarios have the main functions: provide potential risk exposure assessments, beyond the limitations of ongoing models and historic data, and support the planning of capital and the defining of alternative liquidity plans.

We feel that the importance of stress test scenarios increases during stability/economic growth intervals, when, due to the lack of important risks, banks may not be aware of the major impact crisis intervals may have upon their financial stability and may accept higher risks exposures more easily and with lower prices.

Stress test activities must be an integral part of a bank's risk and management culture, while upper management must be actively involved in the drawing up of objectives and scenarios, as well as in the analysis of their results and in the undertaking of the necessary decisions so as to improve risk management activities, capital planning, liquidity, etc.

We feel that in order to provide a risk perspective complementary to other risk management instruments, such as Value at Risk (VaR) and the economic capital, stress-test exercises must provide an independent risk perspective.

Thus, stress test exercises are complementary to the bank's regular risk management models, based on complex, quantitative measures used for the analysis of historic data and for the forecasting of the bank's future evolution based on statistic methods. Furthermore, they can also be used for the validation of statistic models at high confidence levels, used for the computation of Value at Risk (VaR) for example. Stress-testing is also an important risk management instrument during economic expansion intervals, when financial innovations entail the implementation of new products for which no statistic data are available in order to assess the bank's risk exposure towards them, as is the case with other ongoing products.

What is very important in our opinion is the fact that the process of capital planning of a bank should include rigorous stress test scenarios (covering 1-3 years), based on the premise/hypothesis that market terms are changing or that special events have occurred. They must be used in the Internal Capital Adequacy Assessment Process for the identification of the bank's future needs and capital sources in unfavorable situations. This process must also consider the scenario when, because of the crisis, even healthy banks encounter major difficulties in attracting capital/funds at reasonable prices.

Furthermore, we feel that banks must also have other means of assessing in stress test conditions the effect that reputation risk may have upon other risk categories (credit risk, liquidity risk, market risk and other) the bank has exposed itself to, in order to maintain its level of confidence on the market.

Another important aspect revealed by the ongoing crisis is, in our opinion, the fact that banks must assess the risks associated with commitments regarding the securitization operations registered by various SPV-s or performed with various other entities, given the possibility that some of the respective assets might be taken over on-balance. Consequently, we believe that banks must include in their stress test exercises scenarios regarding the evolution of these SPV-s and their potential impact upon the banks' financial statuses, capital and liquidity.

In order to avoid the minimization of the implementation of the above-mentioned requirement by banks, the role of supervisory bodies in the analysis of the banks' stress test systems, methods and principles used and in the identification of weak points must be accentuated. Supervisory bodies must also check the maintenance of the validity/utility of these tests now and in the future.

2. The main deficiencies of stress-test systems as revealed by the crisis

The stress-test principles that have been used by banks so far have reflected several deficiencies in the context of the ongoing crisis, deficiencies which should be diminished/eliminated. Thus, the amplitude and duration of the ongoing financial crisis have made several banks and supervisory bodies wonder whether the stress-test systems used before the onset of the crisis were efficient and useful in the context of the swift changes that occurred at the level of financial markets.

We believe that the crisis has overall proven to be much more severe in terms of amplitude than the worst scenarios of many crisis simulation systems.

It is important to mention the fact that the 1st Pillar of the Basel II Agreement requests that banks using advanced methods (IRB and VaR) must have rigorous stress-test systems in order to assess whether or not their ongoing

capital reserves are sufficient. However, recent analyses have revealed that the stress test simulations used by banks did not result in major capital losses, nor did they include severe enough scenarios. Consequently, the Basel Committee, in collaboration with the banking industry, has undertaken the necessary measures for the re-assessment of the stress test systems used by banks and the elaboration of means for the solving of the deficiencies identified. Thus, the ongoing financial crisis has revealed several deficiencies of the stress-test systems used by banks in four areas:

- the utilization of crisis simulations and their integration in the operative management of risks;
- the stress-tests methodologies used;
- the scenarios used;
- the crisis simulations afferent to specific risks or to banking products.

The utilization of stress test scenarios and their integration in the operative management of risks

It is very important that the top management of a bank becomes involved in the drawing up of the objectives of risk simulations and scenarios, the analysis of their results and the undertaking of decisions regarding risk management activities and capital planning.

Thus, we feel that it is important to mention the fact that the top management of banks that have maintained their financial stability throughout the crisis have adhered (among other things) to the above-mentioned principle. Nevertheless, a major problem for many banks was the fact that the analysis of the results of stress test scenarios did not consider the actual possibilities, swiftness and the costs afferent to the additional capital increases necessary in this context.

A faulty aspect in the domain of stress test simulations performed by many banks prior to the onset of the crisis was that these simulations were isolated exercises performed by risk management specialists without involving other business lines. This is why subsequent analyses have revealed that they were based sometimes on completely unrealistic hypotheses.

Furthermore, many banks performed stress-test exercises only for some activities or risks, without aggregating the results at bank level. In this context, one must also consider the fact that, traditionally, banks perform stress-test exercises for market risk and interest risk only – credit risk was only recently included in the process, which led to an incomplete and incorrect assessment of the latter's effects. The situation is similar for all other risk types (liquidity, reputation risk).

Stress-test methodologies have various levels of complexity, the most advanced ones simulating the impact that severe changes in macroeconomic terms might have upon the bank's incomes and capital. They may consider

various risk types, such as credit risk, market risk, liquidity risk, operational risk, etc., analyzed individually or at aggregated level.

We feel it is very important mentioning that throughout the unfolding of the crisis these methodologies have proven to be faulty, affecting the utilization of stress-tests as management instruments. Their main deficiencies stem from the limitations of the informational infrastructure, which did not enable the swift identification and aggregation of consolidated exposures at the level of banks/ banking groups. Another problem is the fact that most risk management models, including stress-test simulations, use statistic data in order to assess future risk exposures and if said data are gathered during long intervals of economic stability, they become insufficient for the identification of a crisis.

Furthermore, the financial crisis has revealed the fact that the negative reaction of market participants to the initial issues/shocks has greatly amplified their effect, an aspect rarely considered in the regular stress-test models used by banks. Thus, for example, banks have underestimated the strong interdependence between the lack of liquidities on the market and the financing pressures of banks.

Generalizing this example, banks have disregarded or superficially approached the interactions between various risks, inconsistently integrating them at bank level or at financial group level.

Thus, for example, at the onset of the financial crisis, the shocks afferent to the accentuated increase in defaults played an important part in the fast deterioration of the prices afferent to the Collateralized Debt Obligations (CDO-s). At the same time, the respective issues revealed the deficiencies of the models used for the determining of the prices of these assets, as their complexity and lack of transparency have generated mistrust regarding their market value. This is why all market participants stopped purchasing them and the market's liquidity has basically become zero.

The blockage of the securitizations market has forced banks to store their assets which they intended to sell on the secondary market. Due to the lack of transparency of the financial issues banks encountered, the financing of their liquidity needs has become increasingly difficult, as banks with excess liquidities refused to invest in the system, which generated an overall liquidity crisis at global level.

As for the selection of scenarios, most stress test simulations used by banks did not include in their basic scenario the extreme market issues that occurred with the onset of the financial crisis, but rather low (average) shocks, with short-term effects, and did not consider correlations between various types of risks.

Thus, it is quite relevant to mention that before the onset of the crisis, severe stress-test simulations usually resulted in losses equivalent to the incomes gained during one quarter of activity, while the real crisis has proved

that the actual losses would have obliged many banks to declare bankruptcy without financial aid from the states.

Another deficiency of these stress-test models stems from the residual risk of the contractual obligations afferent to the financial lines provided to participants to the securitization market or from the necessity of covering the reputation risks afferent to off-balance SPV-s.

We should also mention that the stress-test scenarios used do not properly reflect the systemic-risk nature of the liquidity crisis, its magnitude or its duration.

3. Case study on the stress test scenarios of a commercial bank

The purpose of the following stress-test simulation is to assess the impact that the deterioration of the main macroeconomic indicators might have upon a bank's exposure to credit, FX, liquidity, interest, operational and market risk, as well as upon its capital requirements, credit risk provisions, the profit and loss account and the structure of the balance sheet of that bank.

The following table displays the evolution of the main macroeconomic indicators in the analyzed crisis scenario: the GDP decreases with 10.2%, industrial production with 22.3%, exports with 27.3%, while the national currency depreciates with 20%, etc.:

Table 1

The evolution of the main macroeconomic indicators

	2007	2008	Stress-test
Real GDP %	6.3	6.8	-10.2
Private consumption%	4.5	5.4	-1.9
Public consumption %	2.9	3.0	5.7
Gross fixed capital %	6.5	5.8	-4.1
Industrial production %	5.4	7.1	-22.3
Imports (nominal) %	28.2	29.1	-38.6
Exports (nominal) %	23.1	21.6	-27.3
Trade deficit in GDP %	-10.8	-12.5	-8.6
Current account deficit in GDP %	-5.1	-7.9	-11.0
Direct foreign investments (flows) in GDP %	7.5	9.1	3.7
Inflation rate	4.4	5.3	3.9
Unemployment rate %	5.8	4.4	7.9
Consolidated budget deficit in GDP %	-1.9	-2.3	-5.6
Public debt in GDP %	18.7	20.6	27.9
Currency policy interest	9.5	9.0	6.0
EUR/RON exchange rate	3.6	4.0	4.8

Note: The data above is based on a work scenario.

3.1. Stress test covering credit risk

Estimations of the impact of the deterioration of macroeconomic indicators due to credit risk are performed from two points of view:

- capital requirements (unexpected losses) computed in compliance with the IRB advanced approach; this approach is based on the re-computation of the Probability of Default (PD), Loss Given Default (LGD) and Risk Weighted Assets (RWA) indicators, as well as of the remaining risk parameters in the context of the crisis scenario;
- provision expenses (expected losses), which leads to the diminishment of the financial results of the analyzed bank.

The main principles used to assess the impact of the deterioration of macroeconomic indicators upon capital requirements in compliance with the IRB advanced approach are the following:

- For Corporate customers, the probability of default was drawn up based on the sensitivity of the economic sectors to the effects of the ongoing crisis:
 - Sectors with high sensitivity: real-estate, constructions, textile-leather, construction materials, furniture production, the chemical and petrochemical industry, car industry, leasing, transports and other.

The average probability of default for these sectors - PD = 20%, ranging from one individual sector to another between 15-25%.

- Sectors with average sensitivity: retail sale, hotels and restaurants, papers and paper products, other.

The average probability of default for these sectors is PD = 9%, ranging from one individual sector to another between 5-15%.

- Sectors with low sensitivity: the food and tobacco industry, public administration, electric power processing and distribution, telecommunications, health, etc.

The average probability of default for these sectors is PD = 3%, ranging from one individual sector to another between 0.5-5%.

- The probability of default for loans granted to private individual clients was determined based on the existence of collaterals:
 - Mortgage or consumer loans secured with real estate assets - average probability of default – PD = 17%,
 - Unsecured consumer loans - average probability of default – PD = 28%.
- Microenterprises (with turnovers of maximum 1 million EUR in equivalent per year) - average probability of default – PD = 22%.

Consequently, the portfolio of loans granted to corporate clients has the following structure conditional upon its sensitivity to the effects of the crisis:

Table 2

The structure of the Corporate loan portfolio

million EUR	2008	Weight (%)	Stress-test 2009	Weight (%)
Total	11.396	100.00	11.780	100.00
Economic sectors with high sensitivity	3.591	31.51	3.150	26.74
Economic sectors with average sensitivity	2.916	25.59	2.980	25.30
Economic sectors with low sensitivity	4.889	42.90	5.650	47.96

Note: The data above is based on a work scenario.

The Retail portfolio (including loans granted to microenterprises) considered in the analyzed stress-test simulation looks as follows:

Table 3

The structure of the Retail loan portfolio

million EUR	2008	Weight (%)	Stress-test 2009	Weight (%)
Total	12.714	100.00	10.425	100.00
Mortgage and consumer loans secured with real estate assets	6.542	51.46	5.954	57.11
Consumer loans	4.321	33.98	2.520	24.17
Loans granted to microenterprises	1.851	14.56	1.951	18.72

Note: The data above is based on a work scenario.

The impact of the stress test scenario on the probability of default - PD indicator for Retail and Corporate clients can be displayed as follows:

- for Retail clients, the average stress factor (multiplier of PD) is 4.8, as compared to the end of 2008;
- for Corporate clients, the average stress factor (multiplier) PD is 6.5 as compared to 2008, as attested by the table below:

Table 4

The impact of the crisis on the Probability of default

million EUR	PD 2008 (%)	Stress factor (multiplier)	PD stress test 2009 (%)	Budget 2009 (%)
Retail, of which:	4.4	4.8	21	9.8
Mortgage and consumer loans secured with residential mortgages	1.5	11.3	17	5.5
Unsecured consumer loans	5.3	5.3	28	13.3
Loans granted to microenterprises	4.8	4.6	22	10.5
Corporate, of which:	2.3	6.5	15	5.4
Loans granted to SME clients	3.8	4.7	18	8.2
Loans granted to Large Corporate clients	1.8	6.1	11	3.9
Loans granted to Real Estate clients	0.5	40.0	20	6.1
Loans granted to Municipalities	0.0	-	2	0.0

Note: The data above is based on a work scenario.

The impact of the stress test scenario upon the Loss given default - LGD is based on the following principles:

- for mortgage and consumer loans secured with residential mortgages from the Retail sector, the LGD stress factor (multiplier) is of 2.1, as compared to the end of 2008. This stems from the diminishment in the value of residential properties, which will entail a decrease in recoveries from 87% to 54%.
- For Corporate agents, the LGD stress factor (multiplier) is of 2.3, as compared to 2008, as attested by the table below.

Table 5

The impact of the crisis on the Loss given default

	LGD 2008 (%)	Stress factor (multiplier)	LGD stress test 2009 (%)	LGD budget 2009 (%)
Retail, of which:	44	2.1	92	61
Mortgage and consumer loans secured with residential mortgages	13	3.5	46	21
Unsecured consumer loans	52	1.8	93	62
Loans granted to microenterprises	36	2.3	82	58
Corporate, of which:	26	2.3	59	44.0
Loans granted to SME clients	31	2.2	68	55.0
Loans granted to large corporate clients	22	2.1	47	40.0
Loans granted to real estate clients	9	4.0	36	21.0
Loans granted to municipalities	0	-	0	0.0

Note: The data above is based on a work scenario.

In order to assess the impact that the new risk parameters will have on the bank's capital requirements, one must compute the risk-weighted exposure towards each client segment, in compliance with the formula (NBR, 2009):

Risk-weighted asset= RW (risk weight %) x Exposure value, where:

RW computation for corporate clients is performed in compliance with the following formulas:

$$\text{Risk weight (RW)} = (\text{LGD} \times N[(1-R)^{-0.5} \times G(\text{PD}) + (R/(1-R))^{0.5} \times G(0.999)] - \text{PD} \times \text{LGD}) \times (1-1.5 \times b)^{-1} \times (1+(M-2.5) \times b) \times 12.5 \times 1.06$$

$$\text{Correlation (R)} = 0.12 \times (1-\text{EXP}(-50 \times \text{PD})) / (1-\text{EXP}(-50)) + 0.24 \times [1 - (1-\text{EXP}(-50 \times \text{PD})) / (1-\text{EXP}(-50))]$$

$$\text{Adjustment conditional upon the maturity date (b)} = [0.11852 - 0.05478 \times \ln(\text{PD})]^2,$$

where $N(x)$ is the cumulative distribution function of a regular standard random variable (which expresses the probability that a regularly distributed random variable with average zero and variance 1 is smaller than or equal to x).

$G(z)$ represents the opposite of the cumulative distribution function for a regular standard random variable [which expresses value x so that $N(x) = z$].

RW computation for retail clients is performed in compliance with the following formulas:

$$\text{Risk weight (RW)} = (\text{LGD} \times N[(1-R)^{-0.5} \times G(\text{PD}) + (R/(1-R))^{0.5} \times G(0.999)] - \text{PD} \times \text{LGD}) \times 12.5 \times 1.06$$

$$\text{Correlation (R)} = 0.03 \times (1 - \text{EXP}(-35 \times \text{PD})) / (1 - \text{EXP}(-35)) + 0.16 \times [1 - (1 - \text{EXP}(-35 \times \text{PD})) / (1 - \text{EXP}(-35))]$$

$N(x)$ is the cumulative distribution function of a regular standard random variable (which expresses the probability that a regularly distributed random variable with average zero and variance 1 is smaller than or equal to x).

$G(z)$ represents the opposite of the cumulative distribution function for a regular standard random variable [which expresses value x so that $N(x) = z$].

Consequently, the risk-weighted assets at the level of the portfolio of exposures on credit-type products divided on retail and corporate segments can be displayed as follows:

Table 6

The risk-weighted assets for the loan portfolio

million EUR	2008	Weight (%)	Stress test 2009	Weight (%)	Increase (%)
Total bank, of which:	14.812	100.0	20.972	100.0	+41.5
Retail	5.630	38.0	9.005	42.9	+59.9
Corporate	9.182	62.0	11.967	57.1	+30.3

Note: The data above is based on a work scenario.

The above-mentioned data reveals a 41.5% increase in the risk-weighted value of assets in the context of the crisis scenario described above, mainly due to the accentuated increase in the risk-weighted value of the exposure afferent to the Retail segment (+60% as compared to 2008).

Aside from the additional capital requirement in the context of the crisis scenario described above, the bank must also consider the impact that the provision expenses afferent to the increase in the volume of non-performing loans has upon the profit and loss account.

Considering:

- The increase in the weight of non-performing loans in the total portfolio, from 3.0% in 2008 to 10.9% in the analyzed crisis scenario;
- The fact that most segments are affected by the increase in the volume of non-performing loans, such as unsecured consumer loans – increasing from 6.3% in 2008 to 18.0% in the analyzed crisis scenario – and loans granted to microenterprises – increasing from 5.2% to 14.3%, loans granted to SME-s, increasing from 3.1% to 11.3%;
- That one of the internal targets of the Bank is to cover 40% of its non-performing loans with provisions – this is the result of the specific targets drawn up for each client segment (computed conditional upon the collateralization degree, the loss given default - LGD etc.),
- this means that the necessary additional provisions that the Bank must draw up amount to 678 million EUR, as displayed in the table below:

Table 7

The impact of the crisis on the credit risk provisions

million EUR	December 2007		December 2008		Stress test		Non-performing loans coverage target (%)	Additional provisions necessary to reach this target
Non-performing loans	Sum	Weight of non-perf. loans (%)	Sum	Weight of non-perf. loans (%)	Sum	Weight of non-perf. loans (%)		
Total bank	614	2.6	733	3.0	2.429	10.9	40	678
Total Corporate clients of which:	190	1.5	221	1.9	987	8.4	34	260
SME-s	150	2.5	170	3.1	665	11.3	40	197
Large Corporate clients	39	1.1	44	1.5	116	4.0	20	14
Real Estate	0	0.0	6	0.3	200	10.5	25	48
Municipalities	1	0.1	1	0.1	6	0.5	10	1
Total Retail clients of which:	424	2.5	512	4.0	1.442	13.8	45	418
Mortgage and consumer loans secured with residential mortgages	122	1.7	144	2.2	709	11.9	30	171
Unsecured consumer loans	250	5.1	272	6.3	454	18.0	90	164
Loans granted to microenterprises	52	3.3	96	5.2	279	14.3	45	83

Note: The data above is based on a work scenario.

3.2. Stress test covering FX risk

In order to assess the impact of the crisis simulation upon the profit and loss account of the bank, one must start from the structure of the bank's assets and liabilities for December 31st 2008, which can be displayed as follows:

Table 8

The net FX positions as of 31.12.2008

RON equiv.	Assets			Liabilities			Net position			Total net FX position
	Indivi- duals	Other coun- ter- parties	Other posi- tions	Indivi- duals	Other coun- ter- parties	Other posi- tions	Indivi- duals	Other coun- ter- parties	Other posi- tions	
EUR	30,581	34,735	35,844	47,317	29,429	25,430	-16,736	5,306	10,414	-1,016
CHF	17	0	73	43	30	0	-25	-30	73	18
USD	838	172	73	941	111	215	-103	60	-142	-185
Other	438	0	176	0	387	146	438	-387	30	81
Total	31,875	34,907	36,167	48,301	29,958	25,791	-16,426	4,949	10,375	-1,102

Note: The data above is based on a work scenario.

The table above reveals that the analyzed bank has drawn resources worth 104,050 million RON (the equivalent of approximative 24,2 billion EUR), which have increased with 1,102 million RON (approximative 256 million EUR) as compared to its assets in foreign currencies, namely 102,949 million RON (the equivalent of approximative 23,942 million EUR). In these terms, the respective bank is exposed to FX risk if the national currency depreciates as compared to the main currencies, as it will have to reimburse larger sums in RON equivalent afferent to the GAP between its assets and liabilities in foreign currencies.

In addition to the above-mentioned information, by applying the following stress test scenarios regarding the depreciation of the national currency as compared to foreign currencies (-5%, -10%, -20% and -35%), one can identify new net FX positions, as attested in the following table:

Table 9

The net FX positions for the stress-test

Stress-test - net result (mil. lei)											Total net FX position after the stress- test
		Assets			Liabilities			Net position			
	Deprecia- tion of the national curren- cy as compared to FX (%)	Indivi- duals	Other counter- parties	Other posit.	Indivi- duals	Other counter- parties	Other posit.	Indivi- duals	Other counter- parties	Other posit.	
Scenario 1	-5	33,469	36,652	37,975	50,717	31,456	27,081	-17,247	5,196	10,894	-1,155
Scenario 2	-10	35,063	38,398	39,783	53,132	32,953	28,370	-18,068	5,444	11,413	-1,211
Scenario 3	-20	38,251	41,888	43,400	57,962	35,949	30,949	-19,711	5,939	12,451	-1,321
Scenario 4	-35	43,032	47,125	48,825	65,207	40,443	34,818	-22,175	6,681	14,007	-1,486

Note: The data above is based on a work scenario.

By comparing the new FX positions derived from the stress-test scenarios and the FX position for December 31st 2008, one can determine the bank's potential loss resulted from the depreciation of the national currency as compared to foreign currencies, as attested in the table below:

Table 10

The impact of the crisis for the FX risk			
Stress-test – impact upon the P&L account			
	Depreciation of the national currency as compared to foreign currencies (%)	Impact upon P&L account (mil. lei)	Impact upon P&L account (mil. EUR)
Scenario 1	-5	-485	-113
Scenario 2	-10	-540	-125
Scenario 3	-20	-650	-151
Scenario 4	-35	-815	-189

Note: The data above is based on a work scenario.

3.3 Stress test covering liquidity risk

The stress-test regarding the impact that liquidity risk has upon the bank's profit and loss account is based on the following premises:

- The sudden drawing of 20% from the deposits of individuals, 10% from the deposits of corporate clients and 30% from interbank deposits;
- A lack of liquidities on the interbank market and the banks' aversion to risks; the only financing possibilities available on the market have an additional cost of 7 p.p. for RON and 4 p.p. for EUR;
- The trading portfolio (shares) register value decreases of 35% per average; consequently, they are not traded for liquidities so that they may redress their value – their selling is unprofitable as compared to the option of drawing resources from the interbank market;
- The t-bills from the bank's portfolio have a very low volume and are not a solution when it comes to obtaining liquidities after refinancing operations performed with the Central Bank;
- The minimum limit of the liquidity indicator (liquid assets/total deposits of individual and corporate entities, as well as interbank deposits) accepted by the Central Bank is 20%; the Central Bank allows the utilization of a part of the minimum obligatory reserves to cover cash drawings for the short-term only, provided that their level is quickly restored afterwards.

In addition to the information above, the evolution of the bank's liquid assets and liabilities and the impact of the stress test upon its P&L indicator can be displayed as follows:

Table 11

The impact of the crisis for the liquidity risk

(million EUR)

Liquid assets before the application of the stress-test scenario	6.250	Liquid assets after the application of the stress-test scenario	2.450
Individual deposits before the application of the stress-test scenario	11.252	Individual deposits after the application of the stress-test scenario	9.002
Corporate deposits before the application of the stress-test scenario	11.825	Corporate deposits after the application of the stress-test scenario	10.643
Interbank deposits before the application of the stress-test scenario	2.572	Interbank deposits after the application of the stress-test scenario	1.800
Total deposits before the application of the stress-test scenario (individual, corporate, interbank)	25.649	Total deposits after the application of the stress-test scenario (individual, corporate, interbank)	21.445
The diminishment of deposits following the application of the crisis scenario	4.204		
The diminishment of liquid assets following the application of the crisis scenario	3.800		
Liquidity indicator before the application of stress-tests*	24.4%		
Liquidity indicator after the application of stress-tests	11.4%		
Additional liquidities necessary for a liquidity indicator of 20% and the observance of minimum obligatory reserves requirements	1.840**		
Losses ensuring additional liquidities	107		

*liquid assets/ total individual, corporate and interbank deposits

** of which 1.100 in RON equiv. and 740 in EUR

Note: The data above is based on a work scenario.

3.4. Stress test covering banking book and trading book interest rate risk

The methodology used is the following:

- all interest rate-sensitive assets and liabilities (both on-balance and off-balance) were distributed on intervals, based on the date for the restoring of the interest rate level, as stipulated in contracts;

- the differences between assets and liabilities were computed for each interval (GAP-s);
- for each scenario, GAP-s were multiplied with the shocks and the results were aggregated.

6 stress test scenarios regarding interests in RON and 4 regarding interests in EUR were used in this respect, as attested by the table below:

Table 12

The scenarios regarding the potential changes of the RON and EUR interest rates

Interest rate change in RON		Interest rate change in EUR	
Scenario	Change	Scenario	Change
Scenario 1:		Scenario 7, on time bands:	
For all maturity dates	+ 250 bp	Under one month	+30 bp
Scenario 2:		1-3 months	+50 bp
For all maturity dates	- 200 bp	3-6 months	+75 bp
Scenario 3, on time bands:		6-12 months	+100 bp
Under one month	+75 bp	1-5 years	+150 bp
1-3 months	+125 bp	over 5 years	+250 bp
3-6 months	+150 bp	Scenario 8, on time bands:	
6-12 months	+200 bp	Under one month	-25 bp
1-5 years	+250 bp	1-3 months	-50 bp
over 5 years	+350 bp	3-6 months	-75 bp
Scenario 4, on time bands:		6-12 months	-125 bp
Under one month	-50 bp	1-5 years	-150 bp
1-3 months	-100 bp	over 5 years	-200 bp
3-6 months	-125 bp	Scenario 9, on time bands:	
6-12 months	-200 bp	Under one month	+250 bp
1-5 years	-250 bp	1-3 months	+200 bp
over 5 years	-300 bp	3-6 months	+175 bp
Scenario 5, on time bands:		6-12 months	+100 bp
Under one month	+250 bp	1-5 years	+50 bp
1-3 months	+200 bp	over 5 years	+25 bp
3-6 months	+150 bp	Scenario 10, on time bands:	
6-12 months	+100 bp	Under one month	-300 bp
1-5 years	+75 bp	1-3 months	-250 bp
over 5 years	+50 bp	3-6 months	-175 bp
Scenario 6, on time bands:		6-12 months	-125 bp
Under one month	-200 bp	1-5 years	-75 bp
1-3 months	-175 bp	over 5 years	-50 bp
3-6 months	-150 bp		
6-12 months	-75 bp		
1-5 years	-50 bp		
over 5 years	-25 bp		

Note: The data above is based on a work scenario.

After the application of the 10 stress-test scenarios, the (positive or negative) impact upon the bank's financial results and capital can be displayed as follows:

Table 13

The impact of the crisis for the interest rate risk
Stress-test scenarios for interest rate risk

		Net result (mil. EUR)
Interest rate for RON		
	Scenario 1	61.26
	Scenario 2	-42.15
	Scenario 3	117.02
	Scenario 4	-105.04
	Scenario 5	-37.41
	Scenario 6	35.38
Interest rate for EUR		
	Scenario 7	43.69
	Scenario 8	-47.23
	Scenario 9	-69.76
	Scenario 10	73.89

Note: The data above is based on a work scenario.

In addition to the above-mentioned information, due to the maintenance of a conservative approach, the management of the respective bank has decided that the scenario used in order to assess the impact of the stress test upon its P&L account and its capital requirements should be scenario 4 for RON and scenario 9 for EUR, resulting in potential losses of approximative 175 million EUR due to the BB interest rate risk.

3.5. The impact of stress test scenarios upon the bank's financial results, balance sheet structure and capital requirements

The impact of stress-test scenarios upon the bank's balance sheet structure is as follows:

Table 14

The impact of the crisis on the balance sheet (IFRS)		
thousand EUR	31.12.2008	Stress test
ASSETS		
Cash and investments at Central Banks	3,627,318	3,523,328
Debts upon credit institutions	117,984	57,956
Repurchase agreements with specific delivery	13,650	13,640
Financial assets held for trading	2,223,022	2,013,051
Fair value financial assets via the P&L account	191,595	281,544
Loans and money in advance granted to the clientele	24,110,000	22,205,000
Financial assets – available for sale	106,077	96,057
Financial assets – held to maturity	98,851	78,565
Insurance companies investments	0	0
Tangible assets	720,531	563,215
Trade fund and other intangible assets	73,726	73,726
Debts from postponed taxes	2,344	2,300
Other assets	423,215	28,508
Assets held for sale	53,218	64,215
TOTAL ASSETS	31,761,531	28,998,105
DEBTS AND OWN CAPITALS		
Sums owed to credit institutions	2,572,339	2,391,524
Repurchase agreements with specific delivery	114,233	113,235
Derivative financial instruments	399,977	402,975
Sums owed to clients	23,077,297	20,831,681
Bonds issued and other borrowed funds	985,825	881,829
Current debts from taxes	165,051	165,051
Debts from postponed taxes	141,593	114,592
Other debts	1,143,422	1,983,420
Subordinated debts	330,000	330,000
Debts afferent to assets held for sale	379,135	259,135
TOTAL DEBTS	29,308,872	27,473,442
Equity	1,082,507	1,082,507
Current result	766,000	-122,000
Other reserves	604,152	564,156
TOTAL OWN CAPITALS	2,452,659	1,524,663*
TOTAL DEBTS AND OWN CAPITALS	31,761,531	28,998,105

* own capitals derived from the stress test, prior to the increase afferent to the maintenance of an appropriate solvency indicator

Note: The data above is based on a work scenario.

If the stress-tests scenarios described should come true, the aggregated losses would amount to 1,111 million EUR, namely:

- 678 million EUR due to the increase in provision expenses;
- 151 million EUR due to FX risk;
- 107 million EUR due to liquidity risk;
- 175 million EUR due to interest rate risk.

By correlating the impact of the losses stemming from the occurrence of banking risks in crisis situations with a gross profit of 989 million EUR, the resulted loss amounts to 122 million EUR.

After the recalculation of risk-weighted assets (credit, market and operational risk) and of the solvency indicator registered by the respective bank if the stress tests scenario comes true, the bank's status could be displayed as follows:

Table 15

The aggregated impact of the crisis on the capital requirements

million EUR	2008	Budget for 2009	Stress test	Difference as compared to 2008 (%)
Total RWA, of which:*	19,515	19,542	25.842	32.42
-for credit risk**	15,812	15,592	21.672	37.06
-for operational risk	2,780	2,900	2.920	5.03
-for market risk	923	1,050	1.250	35.40
Total capital	2,390	2,150	1.854	-22.43
Solvency indicator	12.2	11.0	7.2	-40.98
Additional capital for a solvency indicator of 10% minimum	-	-	730.2	

* the respective bank uses the most advanced methods regulated by the Basel II Agreement, namely: Advanced IRB for credit risk, AMA for operational risk and VaR for market risk

** aside from the capital requirements for the Retail and Corporate segments, the bank also computes the RWA for its other assets as well (assets, investments at other banks, etc.)

Note: The data above is based on a work scenario.

In addition to the information above, the solvency indicator of the analyzed bank decreases to 7.2% in the context of the stress-test scenario described, being below the minimum 8% limit stipulated in the Basel II Agreement and below the 10% limit which is considered a proper level in the context of the ongoing crisis. The diminishment of the solvency indicator is due both to the increasing of risk-weighted assets with 6,327 million EUR (+32.4%), mainly determined by credit risk (+5,860 million EUR, +37.1%) and market risk (+327 million EUR, +35.4%), and to the diminishment of own capitals with 536 million EUR (-22.4%).

This diminishment is due to the impact of the increase of credit risk provisions, losses derived from the depreciation of the national currency as compared to foreign currencies, the unfavorable evolution of interest rates and the manifestation of the other risk categories considered.

In addition to the above-mentioned information, if the stress-test scenario comes true, the respective bank should increase its capital with minimum 213 million EUR (+8.9%), so as to have a solvency indicator of minimum 8%, and with 730 million EUR (+30.5%), so as to have its solvency level at a proper level (10%).

4. Conclusions

We believe that the periodic application of stress-test scenarios must be an integral part of a bank's risk and management culture because they can provide potential risk exposure assessments and support the capital planning and the defining of alternative liquidity plans.

They can increase the endurance of banks and of the financial system when faced with financial crises especially during stability/economic growth periods, when, due to the lack of important risks, banks may not be aware of the major impact crisis may have upon their financial stability and may accept higher risks exposures more easily and with lower prices.

The importance of the stress-test was revealed by the amplitude and duration of the ongoing financial crisis; in the same time, the need of improving their effectiveness is driven by the fact that the crisis has overall proven to be much more severe in terms of amplitude than the worst scenarios of many crisis simulation systems.

We also presented a stress-test simulation for a commercial bank, by assessing the impact that the deterioration of the main macroeconomic indicators might have upon a bank's exposure to credit, FX, liquidity, interest, operational and market risks, as well as upon its capital requirements, credit risk provisions, the profit and loss account and the structure of the balance sheet of that bank.

In conclusion, if the stress-test scenario comes true, the analyzed bank will register losses due to the manifestation of banking risks worth 1,111 million EUR (significantly affecting the bank, as it represents its profit for approximative two years prior to the onset of the crisis) and will have to increase its own capitals with 730 million EUR (which represent approximative 67% from the volume of the bank's existing equity).

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On the Intensity of International Subsidy Competition for FDI

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Abstract. *The objective of this paper is to empirically assess the recently introduced models of subsidy competition based on the classical oligopoly theories. Three crucial scenarios (coordination, weak competition, and fierce competition) are tested employing iteratively re-weighted least squares, fixed effects, and dynamic Blundell-Bond estimator on the data from the World Competitiveness Yearbook. The results suggest that none of the scenarios can be strongly supported – although there is some weak support for cooperation –, and thus that empirical evidence is not in accordance with the tested models. There is no evidence for a significant international competition for FDI. It seems that, however, by means of FDI incentives, governments try to compensate foreign investors for high wages and low productivity of their countries' labor force.*

Keywords: investment incentives, foreign direct investment, panel data, subsidy competition.

JEL Codes: C21, C23, F21, F23, H25.

REL Code: 8N, 18B.

1. Introduction

Although over a few recent years we might have been witnessing a stagnating interest of economic theorists in foreign direct investment incentives – and some countries seemingly saturated with foreign direct investment, e.g., the Czech Republic, have even been considering reducing the benefits for some types of foreign investors –, it is likely that the ongoing economic crisis will once again bring the topic to the sunlight of the international financial community's focus, as worldwide foreign direct investment (FDI) is expected to drop significantly (UNCTAD, 2009). Taking the present conditions into account, it is important to study not only the effectiveness of investment incentives *per se*, but, aside from the traditional macroeconomic view, also the microeconomic motivation which leads governments to use these instruments of attracting foreign investors.

There are two rich streams of empirical literature related to the present paper. The first one concerns in FDI determinants (for a review, see, e.g., Blonigen, 2005), where the volume of inward FDI can be explained – among other things – by corporate income tax rates and sometimes also proxies for investment incentives. The second stream of research focuses on empirical estimation of tax competition (for instance, Devereux et al., 2008; Ghinamo et al., 2008), where countries' tax rates are influenced, aside from other factors, by FDI inflows and outflows or other countries' tax rates. However, to our knowledge, there is no empirical study concerning specifically with the determinants of foreign direct investment incentives – i.e., taking FDI incentives as a response variable.

In this paper, we intend to empirically test the predictions of the models of subsidy competition and supply of FDI incentives recently presented in Havránek (2009) and compare it to the results of Havránek (2007), who tested older versions of these models using very basic cross-sectional methods. The theoretical models distinguish cases of cooperation, weak competition, and fierce competition; simple hypotheses can be formulated to test for each of the scenarios separately. We employ iteratively re-weighted least squares (Hamilton, 2006) for cross-sectional data and dynamic Blundell & Bond (1998) methodology for panel data. We do not select any particular model but use all the estimates obtained employing different approaches to get a more stable overall outcome.

The present paper is structured as follows: in Section 2, we summarize the theoretical models and formulate the most important hypotheses. Section 3 describes the dataset that we have at our disposal and discusses variables constructed on the basis of the data. In Section 4, the employed econometric

techniques and tests are described. Section 5 presents the results and a corresponding discussion. Section 6 concludes the paper and lists a few limitations of the used methodology.

2. Hypotheses

There are two main methodological approaches in Havránek (2009). The first one is called “Minimal sufficient investment incentive model” and predicts sharp competition between governments up to the point where one country gives up or where both countries have zero utility from attracting the foreign investor. It is based on a simple comparison of alternative profits – there are 2 countries and a monopolistic investor; the MNC invests in the country which assures him the highest return possible and the countries try to match their attractiveness with their rival. The other one is called “Optimal investment incentive model” and does not conclude that the competition between rival countries necessarily has to be strong enough to shift all the benefits emanating from FDI spillovers to the foreign investor. This model is based on classical oligopolic theories, where investment incentive is viewed as a commodity (i.e., governments are oligopolies competing among each other). Finally, these models are integrated into a more general one.

There are several possible outcomes of the general model. Either the governments choose cooperation (which is equivalent to some sort of supranational coordination in this case – this is in fact a special case of the Optimal investment incentive model), or they both behave according to other versions of the models (the Minimal sufficient investment incentive model or the “free competition version” of the Optimal investment incentive model), or each government uses a different strategy. Surely, another possibility should be added: that in reality the competition does not follow any of the models developed in Havránek (2009). Thus we obtain the following set of outcome scenarios:

Scenario 1 There exists an effective supranational coordination or governments are cooperating.

Scenario 2 The competition proceeds according to the “free competition version” of the Optimal investment incentive model. Based on the discussion in the original paper, it can be labeled as weak competition.

Scenario 3 One country uses the Optimal investment incentive model, the other relies on the Minimal sufficient investment incentive model.

Scenario 4 The competition proceeds according to the Minimal sufficient investment incentive model. It can be labeled as fierce competition.

Scenario 5 None of the models explains subsidy competition reasonably well.

In the original paper, Scenario 3 was found to be highly improbable with respect to the other options (it is much less stable); therefore, we will not test for it. Concerning the others, there is a large number of propositions raised by Havránek (2009) that can be straightforwardly tested. First, let us concentrate on Scenario 4. This means that the Minimal sufficient investment incentive model has to be tested. The central equation for this model is

$$INI_1 = \frac{\frac{1}{ENT} [M(1 - CIT_2) + INI_2 \cdot CIT_2] - M(1 - CIT_1)}{CIT_1}, \quad (1)$$

where INI_i stands for tax relief, ENT stands for the relative quality of entrepreneurial environment in Country 1 with respect to Country 2, M is duration of the investment, and τ_i is the corporate income tax (CIT) rate; see Havránek (2009) for details. The following hypotheses can be raised to support Scenario 4⁽¹⁾ (detailed explanations of all variables used in this study can be found in Section 3):

- Provision of investment incentives is a decreasing function of the quality of entrepreneurial environment (based on Proposition 1).
 $H_1: ENT \downarrow$
- Provision of investment incentives is an increasing function of labor costs (based on Proposition 2). $H_2: k \uparrow$
- If country's entrepreneurial environment is better than that of its rival, provision of investment incentives is an increasing function of the CIT rate (based on Proposition 3, "Strong competition").
 $H_3: ENT > 1 \Rightarrow CIT_1 \uparrow$
- Provision of country's investment incentives is an increasing function of investment incentives provided by its rival (based on Proposition 4, "Regime competition"). $H_4: INI_2 \uparrow$

The hypotheses for Scenario 4 can be summarized as follows:

$$INI_1 = f(\overbrace{ENT}^-, \overbrace{k}^+, \underbrace{CIT_1}_{+ \text{ if } ENT > 1}, \overbrace{INI_2}^+). \quad (2)$$

Three of the hypotheses are unconditioned, one is conditioned – it will be tested on a subsample of countries for which the condition applies. We simplified the concept of entrepreneurial environment (ENT) in the model to n/k (details are to be found in Section 3). Concerning Scenario 2, the Optimal investment incentive model (to be more specific, its "free competition version") is used. The central equation of the model is

$$INI_1 = \frac{SPILL(2\gamma_2 - \delta_1) + CIT_1(2\alpha_1\gamma_2 + \delta_1\beta_2 - 2\gamma_2 I^0 \cdot RET)}{4\gamma_1\gamma_2 - \delta_1\delta_2} - \frac{CIT_2(2\beta_1\gamma_2 + \alpha_2\delta_1 - \delta_1 I^0 \cdot RET)}{4\gamma_1\gamma_2 - \delta_1\delta_2}, \quad (3)$$

where INI_i stands for investment incentives, $SPILL$ stands for spillovers, RET return on investments, CIT for the corporate income tax rate, and the rest are demand parameters. The corresponding hypotheses are the following:

- Provision of investment incentives is an increasing function of FDI spillovers (based on Proposition 6). $H_5: SPILL \uparrow$
- The CIT rate has an ambiguous effect on the provision of investment incentives. However, if the influence of country's own CIT rate is negative, the influence of its rival's CIT tends to be positive, and vice versa (based on Proposition 8).
 $H_6: CIT_1 \uparrow \Leftrightarrow CIT_2 \downarrow, CIT_1 \downarrow \Leftrightarrow CIT_2 \uparrow$
- If country's CIT rate exceeds at least one half of its rival country's CIT rate, then the provision of investment incentives is a decreasing function of the return on investments (based on Proposition 7).

$$H_7: CIT_1 > \frac{1}{2} CIT_2 \Rightarrow RET \downarrow$$

The hypotheses for Scenario 2 can be summarized as follows:

$$INI_1 = f(\overbrace{SPILL}^{+}, \underbrace{RET}_{- \text{ if } CIT_1 > \frac{1}{2} CIT_2}, \overbrace{CIT_1}^{\text{opposite to } CIT_2}, \underbrace{CIT_2}_{\text{opposite to } CIT_1}). \quad (4)$$

Let us turn our attention to Scenario 1. This is a special case of the Optimal investment incentive model, labeled as “supranational coordination”. The central equation of the model is

$$INI_1 = \frac{SPILL(2\gamma_2 - \delta_1 - \delta_2) + CIT_1[2\gamma_2(\alpha_1 - I^0 \cdot RET) + \beta_2(\delta_1 + \delta_2)]}{4\gamma_1\gamma_2 - (\delta_1 + \delta_2)^2} - \frac{CIT_2[2\beta_1\gamma_2 + (\delta_1 + \delta_2)(\alpha_2 - I^0 \cdot RET)]}{4\gamma_1\gamma_2 - (\delta_1 + \delta_2)^2}. \quad (5)$$

The hypotheses are the same as for Scenario 2, with the exception of the last one which now changes to the following statement:

- If country's CIT rate exceeds its rival country's CIT rate, then the provision of investment incentives is a decreasing function of the return on investments (based on Proposition 11).
 $H_8: CIT_1 > CIT_2 \Rightarrow RET \downarrow$

The hypotheses for Scenario 1 can be summarized as follows:

$$INI_1 = f(\overbrace{SPILL}^{+}, \underbrace{RET}_{- \text{ if } CIT_1 > CIT_2}, \overbrace{CIT_1}^{\text{opposite to } CIT_2}, \underbrace{CIT_2}_{\text{opposite to } CIT_1}). \quad (6)$$

It is apparent that the hypotheses behind Scenario 1 and Scenario 2 are very similar and that it will be difficult to distinguish between the two cases.⁽²⁾ Nevertheless, we believe that it is still meaningful to consider these two scenarios separately. Finally, the hypothesis consistent with Scenario 5 is simple:

- No other scenario can be supported, which would be the case if our findings did not support (or did even reject) majority of hypotheses for any of the 3 other scenarios, or if the resulting support for hypotheses was in logical contradiction (for instance, if H_8 was supported and H_7 was not).

3. Data and Variables Description

One reason why there probably has not been any study estimating determinants of the provision of investment incentives is that it is very difficult to obtain some reliable data on the subject. Not surprisingly, most governments do not publish data on how much money they provided to foreign investors – the field seems to be quite competitive. And even if they did with good faith, it would still be questionable, since there are many forms of government support that cannot be directly quantified. Governments can simply provide cash to the investors, but they can also offer fuzzier fiscal incentives, lower tax rates for MNC's employees, infrastructure construction, temporary wage subsidies, administrative help, easing of environmental or labor-market related requirements, and so forth (see, *inter alia*, OECD, 2003).

Being aware of the fact that there are – at least to our knowledge – no hard data on the variable we are most interested in, we have to choose an alternative methodology. In the World Competitiveness Yearbook, attractiveness of investment incentive systems in many countries is evaluated every year. The evaluation has the form of research survey; i.e., investors are asked which incentive systems they find more attractive and which less. The scale is 0-10, 0 for lowest attractiveness, 10 for the best incentives. It has to be admitted that this is not an ideal measure of investment incentives, nevertheless it is probably the best available one and should, in our opinion, approximate the “real” variable even better than some hypothetical official data provided by governments.

We use the World Competitiveness Online database with time span 1997–2006 as the source of our data (with the exception of variable *ENT* which was obtained from World Banks' World Development Indicators). There are 61 cross-sectional units in the dataset, but some of them are provinces of countries already included in the dataset (Bavaria, Catalonia, Île-de-France, Lombardy, Maharashtra, Sao Paulo, Scotland, Zhejiang), hence we will exclude them from our dataset, since we have data on their mother countries at our disposal. World Competitiveness data are also strongly unbalanced and we have to exclude Bulgaria, Croatia, Estonia, Jordan, Luxembourg, Romania, Slovakia, Slovenia, Venezuela, and year 2006 to get a balanced panel.⁽³⁾ Finally, we are left with 44 countries observed between 1997–2005.

The explanatory variables needed for tests of the hypotheses raised in Section 2 are the following (the shortcuts that we use later in the regression model are typeset in bold):

- k** The relative price of labor power in the original model. However, it is useful to adjust it for different labor productivity in rival countries. Therefore, the definition we use here is

$$k_{it} = \frac{PROD_{it}^{RIV} / WAGES_{it}^{RIV}}{PROD_{it} / WAGES_{it}}, \quad (7)$$

where $PROD_{it}$ is labor productivity (GDP in USD at PPP per person employed per hour) for country i and year t , $WAGES_{it}$ stands for labor costs (wages + supplementary benefits, USD) in country i and year t , and the other variables correspond to the rival country. The higher k is, the less competitive our country becomes with respect to the rival country and *vice versa*.

SPILL The value of spillovers that country receives from foreign direct investment in the original model. This is the most problematic variable to measure (even more than investment incentives), since there is not even a consensus upon whether productivity spillovers from FDI are positive and/or significant.⁽⁴⁾ Nevertheless, there are theoretical approaches to measure the *absorption capacity* of economies with respect to FDI spillovers. For example, we can use a measure that could be called “macro-level technology gap”:

$$TGAP_{it} = \frac{PROD_t^{MAX} - PROD_{it}}{PROD_t^{MAX}}, \quad (8)$$

which is based roughly on Kokko (1994) (here defined at the macro level, however; much more about technology gap can be found in Sjöholm, 1999).

$PROD_{it}$ stands for labor productivity in country i and year t , $PROD_t^{MAX}$ for the highest labor productivity in the sample for year t . The standard hypothesis is that broader technology gap prevents the economy from receiving FDI spillovers (thus we can use $-TGAP$ in our model as a measure of positive spillovers). Another way – and that is what we focus on – can be to rely on the knowledge adoption concept. In this paper, we apply the knowledge adoption function used by Papageorgiou (2002).⁽⁵⁾ The function is described by (9) and depicted in Figure 1.

$$SPILL_{it} = \max \left\{ 0, \left[(1+b) \frac{PROD_t^{MAX}}{PROD_{it}} - \left(\frac{PROD_t^{MAX}}{PROD_{it}} \right)^2 - b \right] \right\}. \quad (9)$$

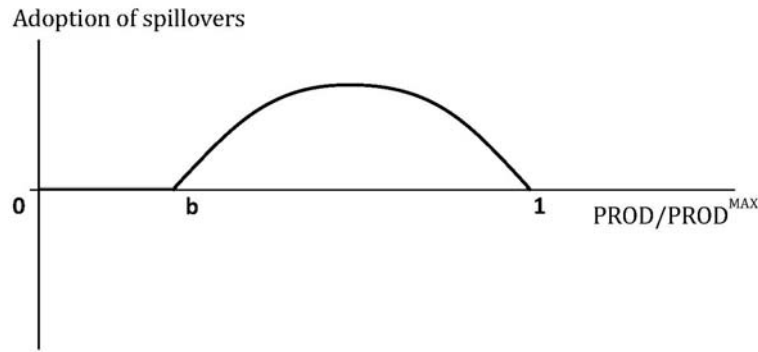


Figure 1. Assumed mechanism of spillover adoption

It should be noted that Papageorgiou (2002) does not deal with FDI spillovers directly in his paper; he employs a general knowledge/technology adoption concept. We use this function because we believe that it could describe the absorption capacity of economies reasonably well. Significantly undeveloped countries have no or very limited possibility to enjoy productivity spillovers from foreign investments, because the technological difference between investors and domestic firms are too large to be overcome *ceteris paribus*. The coefficient b determines how productive (relatively to the most productive country in the sample) a country has to be to begin exploiting FDI spillovers. We consider 2 different values of b , specifically 0.25 (forming variable $SPILLA$) and 0.5 (variable $SPILLB$).

ENT Relative “quality of entrepreneurial environment”. As defined in the original model, it is a rather complex formula covering market size, labor costs, transaction costs, and demand parameters. For the purpose of this paper, we decided to simplify the formula to n/k , where n stands for the relative size of country’s market (the country has n -times higher GDP in terms of purchasing power parity than its rival), and k for the relative price of labor (adjusted for different labor productivity, see above). If n/k exceeds 1, we conclude that country’s entrepreneurial environment is better than that of its rival.⁽⁶⁾ This approximately covers the idea of “entrepreneurial environment” in Havránek (2009).

CIT₁ Statutory corporate income tax in the country.

CIT₂ Statutory corporate income tax in the rival country.

RET Rate of return on investment. The assumption in the original model (rather restrictive) is that the country and its competitor have the same rate of return on investments. In our case, that would mean the same rate of return for all the countries (countries do not necessarily create “competing pairs”, one country can be the rival for many others, see the concept of rival country below), but then it would not be meaningful to include rate of return into the regression since we would have only observations from 9 years at our disposal. Therefore, we decided to split the sample into 3 parts according to the geographical position of the countries – the Americas, Europe (+ Middle East), and Asia (+ Oceania). Variable *RET* for each country is then driven by real interest rate of the leading financial power of the group: USA for the Americas, Eurozone for Europe, and Japan for Asia. Because in almost all cases countries compete within these groups, the model’s assumption is not violated in principal.

INI₁ Foreign direct investment incentives in the country.

INI₂ Foreign direct investment incentives in the rival country.

Rival country. When constructing the variables, one of the most important concepts was the definition of “rival country”. Probably the easiest and most intuitive way is to combine the geographic and cost perspectives. Let us imagine, for instance, an automobile manufacturer planning its investment in central Europe. It certainly considers the cost and productivity of labor (the

higher *PROD/WAGES*, the better), but it also highly values proximity to its main markets – logistics plays a significant role (not only) in the auto industry. Thus we can often witness two neighboring countries, similar in productivity and labor costs, competing for an investment.

Based on this example, we constructed the following mechanism: preferably, the rival country to country *i* should be one of its neighbors. Among them, the one with ratio *PROD/WAGES* closest to that of country *i* is chosen. If there is no neighbor of country *i* in our sample or if country *i* is an island, we choose from the group of 3 countries that are closest to its shore. Generally, the result of this algorithm might vary each year for a particular country. We made the simplification of computing the result only for year 2005 and holding the rival country constant through time span 1997-2005.

Control variables. In the World Competitiveness Online database, there are other variables that could significantly influence the level of provided investment incentives as well. We concentrated on the following 5 of them:

FDI Total stock of inward FDI divided by total GDP (PPP). The hypothesis we raise is that country saturated with FDI is less willing to provide substantial incentives to foreign investors. $H_9: FDI \downarrow$

RISK Defined as the risk of relocation of production facilities from the country. It can be assumed that the higher risk of relocation the government feels, the higher incentives it is willing to provide to foreign investors. $H_{10}: RISK \uparrow$

CLEG Efficiency of competition legislation in preventing unfair competition. The hypothesis is that countries with poor legislation have to provide much higher incentives to foreign investors as an offset. $H_{11}: CLEG \downarrow$

BUDGET Country's budget surplus/deficit. The hypothesis is that countries with substantial budget deficits are not able or willing to provide high investment incentives. $H_{12}: BUDGET \uparrow^{(7)}$

GDPG Real GDP growth in the country. We expect that countries experiencing fast GDP growth do not need FDI as much as countries with sluggish growth, hence they will also not desire to provide high investment incentives. $H_{13}: GDPG \downarrow$

4. Methods of Estimation

In an attempt to test the hypotheses introduced in Section 2, we construct a linear regression model. We use both cross-sectional techniques for 2005 and panel data approaches for the whole time span 1997-2005. First, it appears that variables *BUDGET* and *GDPG* do not bring any value added to explaining variance in *INI*₁ in any of the specifications that we employ. Since we only intended to use them as control variables and they are not important for the testing of our main hypotheses, we exclude them from the regression. Therefore, the model reduces to

$$\begin{aligned} INI_{1it} = & \alpha + \beta_1 k_{it} + \beta_2 SPILLA_{it} + \beta_3 ENT_{it} + \beta_4 CIT1_{it} + \beta_5 CIT2_{it} \\ & + \beta_6 RET_{it} + \beta_7 INI2_{it} + \beta_8 FDI_{it} + \beta_9 RISK_{it} + \beta_{10} CLEG_{it} + \varepsilon_{it}, \end{aligned} \quad (10)$$

where we have $i = 1, \dots, 44$; $t = 1997, \dots, 2005$.

Acronyms of all used variables can be found in Table 7 in the Appendix and their detailed description in Section 3. The specification introduced in (10) will be called *complete*. The *pure* specification will label the situation when we exclude all 3 control variables (*FDI*, *RISK*, *CLEG*) from the model and keep only those regressors that we need to test the hypotheses from hyp. The *best* specification will be unique for each method of estimation and will be formed in such a way that the resulting model includes as many significant explanatory variables as possible.⁽⁸⁾ Some of our hypotheses are conditioned; therefore, we need to define the conditions we are using:

Condition 1 $ENT > 1$

Condition 2 $CIT1 > \frac{1}{2} CIT2$

Condition 3 $ENT > CIT2$

Apart from *SPILLA*, we will also try to use alternative measures for spillovers, namely *SPILLB* and *TGAP*. It should be noted that *TGAP* is a measure for *negative* spillovers, since the theory suggests that the higher technology gap, the lower opportunities for domestic firms to benefit from inward foreign direct investment. As a consequence, we should observe opposite signs of the estimates for *SPILLA* (or *SPILLB*) and *TGAP*. The alternative measures will be applied to the *complete* model and if the model shows higher performance, these alternatives will be used in other specifications as well.

Cross-sectional methods. We start with the year 2005 and standard cross-sectional approaches, beginning with OLS. We have 44 observations at our disposal; all computations were conducted in Stata 10. First, let us focus on the problem of collinearity. Table 8 in the Appendix shows correlation coefficients between explanatory variables. None of them exceeds 0.5, which is a safe value. The condition number of the *complete* model reaches 43.8, which is above the usual threshold of 30 – nonetheless, it is not drastically excessive and in other specifications falls well below 30 (24.5 for the *best* model). Considering possible non-linear relationships, we use the Weierstrass Approximation Theorem (see Víšek, 1997, p. 71) and estimate J following regressions [we regress powers of explanatory variables of (10) on each other; $t = 2005$]:

$$X_{im} = \alpha + \sum_{j=1}^J \sum_{p=1}^P \beta_{jp} X_{ij}^p + \mathcal{G}_i, \quad i = 1, \dots, N, \quad m = 1, \dots, J, \quad m \neq j. \quad (11)$$

We computed (11) with $J = 10$ and $P = 6$, the coefficients of determination of such regressions are listed in Table 1 together with what is usually called linear redundancy (i.e., with $P = 1$). Most of the values oscillates around 0.5, the highest number is 0.69, which is also not excessive – thus we can conclude that, although there is some increase compared to linear redundancy, non-linear dependencies among explanatory variables should not represent a significant problem in our regressions.

Table 1

Linear and non-linear relationships

Variable	Linear	Polynomial
Relative price of labor	0.12	0.45
Spillover absorption capacity ($b = 0.25$)	0.21	0.49
Quality of entrepreneurial environment	0.14	0.45
Corporate income tax	0.34	0.59
Rival's corporate income tax	0.24	0.50
Return on investment	0.15	0.35
Rival's investment incentives	0.28	0.52
FDI stock on GDP	0.38	0.69
Risk of relocation	0.10	0.37
Efficiency of competition legislation	0.27	0.66

To deal with possible heteroscedasticity of disturbances, we employ heteroscedasticity robust standard errors computed with the Huber-White sandwich estimator, see Huber (1967) and White (1980). In order to test for normality of disturbances of the *complete* model, we use the Shapiro-Wilk test, which unfortunately rejects the null hypothesis at the 5% level. We tried to employ several transformations, but the result did not change significantly. Ramsey RESET test (which tests for omitted variables and can be also interpreted as a test of linearity) does not reject the null hypothesis of no omitted variables at the 5% level. These tests provide us with identic results in the case of the *best* model as well.

The results of OLS estimation can be found in Table 2. On the one hand, the coefficient of determination oscillates around 0.5, which is not a small number considering the nature of the data. On the other hand, there are only few significant explanatory variables. The *best* model was obtained by gradual excluding the most insignificant explanatory variables until further exclusions would lower the number of significant (at the 10% level) regressors. It should be also noted that applying Condition 1 and Condition 3, we obtain only 17 (and 16, respectively) observations we can use – this does not give us enough degrees of freedom to take these regressions very seriously. Conversely, Condition 2 is much less restrictive and leaves 43 observations for the regression.

Until now, we did not discuss data contamination, and OLS was performed using all observations as a benchmark case. Now let us focus on a robust method – iteratively re-weighted least squares (IRLS). Details about this estimator can be found for example in Hamilton (2006, pp. 239-256). It can be explained easily in the following way: first, OLS is estimated and we exclude observations with Cook's distance higher than 1. Then we calculate weights using a Huber function – it assigns lower weights to observations with large residuals. We perform weighted least squares and after a few iterations, we shift the weight function to a Tukey biweight function tuned for 95% Gaussian efficiency. For estimating standard errors and testing hypotheses, IRLS uses a pseudovalues method that does not assume normality.

Ordinary least squares, 2005

Table 2

	Complete	Spillb	Tgap	Cond. 1	Cond. 2	Cond. 3	Best	Pure
k	0.763 (1.37)	0.688 (1.23)	0.664 (1.2)	-0.515 (-0.26)	0.792 (1.41)	3.539 (1.43)	0.838 [†] (1.72)	1.316 [†] (2.00)
spilla	-3.820 (-1.21)			-11.19 (-1.62)	-2.145 (-0.67)	-4.924 (-0.91)	-3.793 (-1.25)	-0.255 (-0.08)
ent	0.0126 (0.23)	0.0227 (0.42)	0.0243 (0.42)	0.0946 (0.52)	0.0140 (0.26)	0.0342 (0.26)		0.0228 (0.34)
cit1	-0.0536 [*] (-2.32)	-0.0496 [†] (-1.89)	-0.0550 [*] (-2.12)	-0.0176 (-0.24)	-0.0401 (-1.69)	-0.0719 (-0.75)	-0.0531 [*] (-2.57)	-0.0790 ^{**} (-2.72)
cit2	-0.00309 (-0.09)	0.000475 (0.01)	0.00275 (0.08)	-0.0326 (-0.28)	0.00168 (0.05)	0.0277 (0.36)		-0.00054 (-0.02)
ret	0.395 (0.41)	0.346 (0.34)	0.139 (0.15)	1.559 (0.57)	0.552 (0.58)	-1.069 (-1.02)		-0.0146 (-0.01)
ini2	0.0493 (0.22)	0.0350 (0.16)	0.0457 (0.20)	0.147 (0.18)	0.0594 (0.28)	-0.168 (-0.42)		-0.2 (-0.91)
fdi	0.700 [*] (2.36)	0.715 [*] (2.05)	0.736 [†] (1.96)	1.759 (0.34)	0.572 [*] (2.27)	-0.533 (-0.22)	0.710 [*] (2.64)	
risk	-0.293 [*] (-2.26)	-0.302 [*] (-2.28)	-0.278 [†] (-2.03)	-0.579 (-0.93)	-0.339 [*] (-2.66)	-0.304 (-0.42)	-0.258 [*] (-2.28)	
pleg	0.358 [†] (1.91)	0.328 [†] (1.73)	0.360 [†] (1.83)	0.368 (0.44)	0.322 (1.68)	-0.174 (-0.63)	0.330 [*] (2.22)	
spillb		-4.615 (-0.65)						
tgap			0.547 (0.76)					
Constant	1.973 (0.46)	1.984 (0.46)	2.278 (0.53)	-3.091 (-0.18)	0.699 (0.17)	8.638 (1.76)	3.691 ^{**} (3.83)	8.164 [*] (2.29)
Observations	44	44	44	17	43	16	44	44
R ²	0.492	0.476	0.476	0.526	0.462	0.769	0.485	0.285

t statistics in parentheses

Note: Computed using heteroscedasticity robust (Huber-White sandwich est.) t statistics

[†] p < 0.1, * p < 0.05, ** p < 0.01

Iteratively re-weighted least squares, 2005

Table 3

	Complete	Spillb	Tgap	Cond. 1	Cond. 2	Cond. 3	Best	Pure
k	0.375 (0.64)	0.449 (0.74)	0.286 (0.50)	-0.613 (-0.25)	0.446 (0.79)	0.295 (0.11)		1.311 [†] (1.95)
spilla	-4.534 (-1.39)			-12.02 (-1.16)	-2.728 (-0.82)	-46.31 [†] (-2.28)		-0.107 (-0.03)
ent	0.00026 (0.00)	0.0109 (0.19)	0.0118 (0.21)	0.0914 (0.51)	0.00297 (0.05)	-0.206 (-2.06)		0.019 (0.29)
cit1	-0.0469 [†] (-1.71)	-0.0426 (-1.40)	-0.0407 (-1.49)	-0.0174 (-0.17)	-0.0341 (-1.23)	0.47 (2.01)	-0.0483 [†] (-1.80)	-0.0742 [*] (-2.46)
cit2	0.0259 (0.94)	0.0188 (0.66)	0.0348 (1.27)	-0.04 (-0.28)	0.0291 (1.09)	-0.328 (-2.10)		0.00624 (0.19)
ret	0.881 (1.02)	0.707 (0.77)	0.598 (0.61)	1.346 (0.40)	0.933 (1.11)	-9.024 [†] (-2.24)		-0.0394 (-0.04)
ini2	0.222 (1.10)	0.15 (0.71)	0.236 (1.17)	0.119 (0.13)	0.216 (1.11)	-1.373 [*] (-2.78)		-0.159 (-0.77)
fdi	0.672 (1.60)	0.677 (1.50)	0.738 (1.66)	1.568 (0.27)	0.567 (1.38)	7.900 (1.62)	0.711 [†] (1.77)	
risk	-0.245 (-1.48)	-0.274 (-1.58)	-0.231 (-1.34)	-0.556 (-0.69)	-0.291 [†] (-1.79)	0.0177 (0.07)	-0.278 [†] (-1.89)	
cleq	0.483 ^{**} (2.92)	0.404 [*] (2.35)	0.501 [*] (2.69)	0.393 (0.48)	0.427 [*] (2.65)	-0.506 (-2.13)	0.317 [*] (2.34)	
spilib		-4.315 (-0.58)						
tgap			0.832 (0.96)					
Constant	-1.817 (-0.47)	-0.721 (-0.18)	-2.155 (-0.55)	-1.808 (-0.09)	-2.537 (-0.66)	42.40 [†] (2.59)	4.040 ^{**} (3.38)	7.662 [†] (1.95)
Observations	44	44	44	17	43	15	44	44
R ²	0.477	0.436	0.457	0.417	0.447	0.956	0.394	0.234

t statistics in parentheses

[†] p < 0.1, * p < 0.05, ** p < 0.01

Estimates with the help of IRLS are summarized in Table 3. Results are quite different from OLS, that is why we suspect there can be influential outliers in the data and decide to rely more on IRLS.

Panel data techniques. Now let us turn our attention to the whole period 1997-2005. First, we perform a test of poolability using a variant of the Chow test with fixed effects as the null hypothesis. The test of poolability is important, because fixed effects also impose restrictions on the structure of the model, and it is not sufficient to employ only Hausman test to choose between fixed effects and random effects (see Baltagi, 2005, p. 19). The Chow test does not reject the null hypothesis at the 5% level; therefore, pooling of our data does not seem unreasonable. Then we employ the Hausman test to determine whether or not it would be more appropriate to use the random effects model instead of fixed effects. The resulting test statistics is 53.4, thus the null hypothesis is rejected powerfully – we should use the fixed effects estimator.

We would like to identify at least the most influential outliers in our data, thus we choose the following approach: pooled OLS is performed and Cook's distance and residuals computed for each observation. In the next step, we order observations according to the absolute value of residuals and Cook's distance. It is apparent that especially values for Russia and Hong Kong (both Cook's distance and residuals) are very excessive for most of the years; therefore, we label these two groups of observations as possible outliers. There are (at least) 2 problems with this approach: firstly, there is the so-called masking effect (Bramati & Croux, 2007), which means that outliers can affect the non-robust estimator in such a way that any diagnostic based on this estimator is not capable of detecting them. Secondly, we identified the outliers on the basis of pooled OLS, but we are going to employ the fixed effects model. Certainly one can find many proposed robust estimators for fixed effects, for example in Bramati & Croux (2007), but these are still not widely used. Hence we will simply compare the result of our model with "outliers" specified above to a specification without them and choose the one with better performance.

We employ LM tests for heteroscedasticity (Verbon, 1980) and serial correlation (Baltagi & Li, 1995), both do not reject the null hypothesis at the 5% level for the *complete* specification (either with all observations or without spillovers). Comparing the results of fixed effects estimates with and without spillovers, we conclude that the specifications without spillovers are preferable (the models have much more significant explanatory variables and also coefficients of determination are usually higher). We present the results of fixed effects without outliers in Table 4 and leave specifications with all observations for the Appendix (Table 9). We can see that, compared to cross-sectional estimators in 2005, much more explanatory variables are significant now. We have a sufficient number of degrees of freedom to test more reliably also our hypotheses connected to Condition 1 and Condition 3.⁽⁹⁾

Fixed effects estimator, 1997-2005, “outliers” excluded

Table 4

	Complete	Spillb	Tgap	Cond. 1	Cond. 2	Cond. 3	Best	Pure
k	0.460 [*] (2.05)	0.531 [*] (2.38)	0.554 [*] (2.49)	0.0569 (0.16)	0.456 [*] (2.02)	1.111 [*] (2.37)	0.474 [*] (2.15)	0.505 [†] (1.87)
spilla	5.104 [*] (2.12)			11.58 ^{**} (2.76)	5.366 [*] (2.14)	0.500 (0.11)	5.241 [*] (2.21)	9.168 ^{**} (3.20)
ent	0.179 ^{**} (3.09)	0.186 ^{**} (3.19)	0.184 ^{**} (3.17)	0.139 [*] (2.25)	0.178 ^{**} (3.07)	0.219 (1.33)	0.183 ^{**} (3.24)	0.285 ^{**} (4.17)
cit1	-0.00585 (-0.51)	-0.00554 (-0.48)	-0.00360 (-0.31)	0.0265 (1.59)	-0.00420 (-0.34)	-0.0184 (-1.03)		-0.00598 (-0.45)
cit2	-0.00155 (-0.15)	-0.00351 (-0.33)	-0.00441 (-0.41)	0.0164 (1.04)	-0.00164 (-0.15)	-0.0357 (-1.46)		-0.0162 (-1.28)
ret	0.0444 [†] (1.72)	0.0414 (1.59)	0.0366 (1.40)	0.150 ^{**} (3.73)	0.0435 [†] (1.67)	0.0858 [†] (1.80)	0.0406 [†] (1.73)	0.0182 (0.62)
lin2	0.0301 (0.64)	0.0375 (0.80)	0.0409 (0.87)	0.117 [*] (1.73)	0.0318 (0.67)	0.0779 (0.94)		0.0156 (0.28)
fdi	0.813 [*] (2.32)	0.863 [*] (2.45)	0.887 [*] (2.51)	1.696 [†] (1.87)	0.786 [*] (2.17)	1.663 [*] (2.11)	0.849 [*] (2.57)	
risk	-0.335 ^{**} (-7.59)	-0.345 ^{**} (-7.78)	-0.350 ^{**} (-7.97)	-0.303 ^{**} (-4.76)	-0.335 ^{**} (-7.55)	-0.324 ^{**} (-4.14)	-0.334 ^{**} (-7.61)	
cleg	0.512 ^{**} (7.00)	0.516 ^{**} (7.00)	0.509 ^{**} (6.89)	0.560 ^{**} (4.90)	0.514 ^{**} (6.97)	0.699 ^{**} (6.14)	0.515 ^{**} (7.07)	
spillb		2.423 (0.58)						
tgap			-0.836 (-0.83)					
Constant	0.0626 (0.08)	0.233 (0.28)	0.614 (0.66)	-2.876 [*] (-2.25)	-0.0333 (-0.04)	-0.537 (-0.35)	-0.0289 (-0.05)	4.926 ^{**} (6.46)
Observations	378	378	378	160	375	157	378	378
R ²	0.384	0.376	0.376	0.532	0.382	0.486	0.382	0.094

t statistics in parentheses

† p < 0.1, * p < 0.05, ** p < 0.01

Blundell-Bond estimator, 1997-2005, all observations

Table 5

	Complete	Spillb	Tgap	Cond. 1	Cond. 2	Cond. 3	Best	Pure
Lini1	0.516** (6.08)	0.456** (5.52)	0.441** (5.21)	0.467** (4.07)	0.464** (5.69)	0.260** (3.22)	0.463** (5.73)	0.609** (7.00)
k	1.125** (3.45)	0.958** (3.02)	0.948** (2.99)	-0.0289 (-0.05)	0.918** (2.80)	2.163** (5.31)	0.969** (3.05)	0.772* (2.15)
spilla	-2.808 (-0.98)							
ent	0.162† (1.78)	0.141† (1.69)	0.158† (1.93)	-0.00673 (-0.07)	0.117 (1.42)	0.0296 (0.58)	0.140† (1.70)	0.0614 (0.67)
cit1	-0.0402* (-2.17)	-0.0329† (-1.83)	-0.0380* (-2.16)	-0.0595* (-2.11)	-0.0288 (-1.54)	-0.0614* (-2.50)	-0.0312† (-1.86)	-0.0162 (-0.83)
cit2	0.00907 (0.53)	0.00744 (0.45)	-0.000524 (-0.03)	0.0181 (0.60)	0.0138 (0.83)	-0.00846 (-0.38)		-0.0129 (-0.74)
ret	0.0759† (1.88)	0.0651† (1.70)	0.106** (2.76)	0.123† (1.76)	0.0858* (2.13)	0.0935 (1.54)	0.0698* (1.98)	0.0840* (2.01)
ini2	0.173** (2.67)	0.145* (2.31)	0.148* (2.38)	0.00508 (0.05)	0.167** (2.58)	0.254** (3.47)	0.142* (2.30)	0.150* (2.12)
fdi	0.130 (0.35)	0.0458 (0.13)	0.255 (0.72)	-0.353 (-0.24)	0.584 (1.04)	1.482 (1.63)		
risk	-0.162** (-2.78)	-0.184** (-3.26)	-0.189** (-3.34)	-0.161† (-1.83)	-0.200** (-3.37)	-0.0681 (-0.88)	-0.182** (-3.24)	
cleg	0.274** (3.08)	0.294** (3.42)	0.280** (3.29)	0.135 (0.88)	0.288** (3.18)	0.399** (3.39)	0.284** (3.40)	
spillb		-17.59** (-3.43)		-4.196 (-0.47)	-17.13** (-3.21)	-17.63** (-2.80)	-17.58** (-3.42)	-12.50* (-2.18)
lgap			2.372** (3.06)					
Constant	-1.010 (-0.74)	-0.382 (-0.30)	-1.536 (-1.24)	2.665 (1.40)	-1.092 (-0.80)	0.275 (0.24)	-0.160 (-0.16)	1.500 (1.32)
Observations	352	352	352	142	342	145	352	352

t statistics in parentheses

† p < 0.1, * p < 0.05, ** p < 0.01

The performance of the model could increase significantly if we added a lagged value of the response variable to the set of explanatory variables. We cannot estimate such a model using ordinary fixed effects, though. By construction, unobserved panel-level effects are correlated with the lag of explanatory variable, which makes the standard fixed effects estimator inconsistent. Taking this into account, we could use the estimator developed by Arellano & Bond (1991), which is based on general method of moments. But as Blundell & Bond (1998) note, the Arellano & Bond (1991) estimator can produce misleading results in some cases (e.g., if the autoregressive parameter is large). Therefore, we will employ a more “robust” estimator developed by Blundell & Bond (1998), who build on Arellano & Bover (1995).

Because *SPILLA* was not found to be significant in the *complete* model whilst *SPILLB* was, the rest of the specifications (with the exception of the *best* specification, naturally) was computed using *SPILLB* instead of *SPILLA*. When we compare the specifications with all observations with the ones without outliers, it seems that the models with all observations perform better. Their results can be found in Table 5 – now majority of regressors are significant. The specifications without outliers are left for the Appendix (see Table 10). As a benchmark, we also computed the models using the older Arellano & Bond (1991) estimator (Table 11 in the Appendix).

5. Discussion of Results

In Section 4, we employed various econometric techniques to get more stable overall results. Most of the hypotheses from Section 2 and Section 3 are very easy to test (including H_1 , H_2 , H_4 , H_5 , H_9 , H_{10} , H_{11}). Simple t -tests – or their alternatives in the case of non-OLS regressions – are applied on the *complete* model. If the estimate of the coefficient of the variable in question is found to be significant and in line with our hypothesis, we say that the particular method of estimation *supports* the hypothesis. If the estimate is found to be significant but in contrast to the hypothesis, we say that the hypothesis is *rejected*. If the estimate is not significant, then we cannot support nor reject the hypothesis, thus we say it is *not rejected* and the test is inconclusive. If the estimate is not significant in the *complete* model, we first look at the *best* and *pure* specifications. When it gains significance in one of them, we use that particular specification.⁽¹⁰⁾

However, some of the hypotheses are conditioned (including H_3 , H_6 , H_7 , H_8). H_6 is a special case; we say that it is supported when at least one of the explanatory variables CIT_1 and CIT_2 is significant, their estimated signs are opposite, and the hypothesis $\gamma_1 + \gamma_2 = 0$, where the gammas are the respective regression coefficients, cannot be rejected at the 10% level of significance. H_3 , H_7 and H_8 are tested on subsamples of observations satisfying Condition 1, Condition 2, and Condition 3, respectively.

We tried different definitions of spillovers (*SPILLA*, *SPILLB*, *TGAP*). The estimated coefficient was rarely found to be significant; never in the case of *TGAP*. Nonetheless, the estimated signs of *SPILLA* (or *SPILLB*) and *TGAP* differ in all cases, which is quite logical. What is not in line with the theory, however, is that – for example using the Blundell-Bond estimator – the estimated coefficient for *SPILLB* is negatively significant.

The results are summarized in Table 6. It is apparent that, in the case of OLS, the tests are mostly inconclusive. There are more significant outcomes for IRLS and fixed effects estimator, but mainly for Blundell-Bond estimator.

Scenario 4. Starting with H_1 (provision of investment incentives is a decreasing function of the quality of entrepreneurial environment), we can see that while cross-sectional techniques for 2005 do not reject the hypothesis, panel data methods reject it in both cases. Weighting all these results equally, we have to reject this hypothesis.⁽¹¹⁾ H_2 (provision of investment incentives is an increasing function of labor costs) is supported by all techniques – as the only one. Countries have to compensate foreign investors for high unit costs and low productivity. H_3 (if country's entrepreneurial environment is better than that of its rival, provision of investment incentives is an increasing function of the CIT rate) can be weakly rejected, since only the Blundell-Bond estimator rejects the hypothesis and other estimates are inconclusive. Conversely, H_4 (Provision of country's investment incentives is an increasing function of investment incentives provided by its rival) is weakly supported.

Table 6

Summary of conducted regressions and tests

Hypothesis	OLS	IRLS	FE	BB	Result
Scenario 4					inconclusive
H_1 : $ENT \downarrow$	NR	NR	R	R	reject
H_2 : $k \uparrow$	S	S	S	S	strongly support
H_3 : $ENT > 1 \Rightarrow CIT_1 \uparrow$	NR	NR	NR	R	weakly reject
H_4 : $INl_2 \uparrow$	NR	NR	NR	S	weakly support
Scenario 2					inconclusive
H_5 : $SPILL \uparrow$	NR	NR	S	R	inconclusive
H_6 : $CIT_1 \uparrow \Leftrightarrow CIT_2 \downarrow$	NR	S	NR	S	support
H_7 : $CIT_1 > \frac{1}{2} CIT_2 \Rightarrow RET \downarrow$	NR	NR	R	R	reject
Scenario 1					weakly support
H_5 : $SPILL \uparrow$	NR	NR	S	R	inconclusive
H_6 : $CIT_1 \uparrow \Leftrightarrow CIT_2 \downarrow$	NR	S	NR	S	support
H_8 : $CIT_1 > CIT_2 \Rightarrow RET \downarrow$	NR	S	R	NR	inconclusive
Other					
H_9 : $FDI \downarrow$	R	R	R	NR	strongly reject
H_{10} : $RISK \uparrow$	R	R	R	R	strongly reject
H_{11} : $CLEG \downarrow$	R	R	R	R	strongly reject
Note: R stands for reject, NR for not reject, and S for support.					
Fixed effects were computed without outliers, Blundell-Bond estimator using all obs.					

Combining all these results, we cannot entirely reject Scenario 4, but we cannot support it either. Two of the hypotheses are supported (strongly or weakly), the other two are rejected. Support for H_4 may indicate some level of regime competition, but it is not strong as only one of the estimators is significant.

Scenario 2. Let us continue with H_5 (provision of investment incentives is an increasing function of FDI spillovers) – cross-sectional methods cannot reject the hypothesis, whereas fixed effects estimator supports the hypothesis and Blundell-Bond estimator rejects it. Taken altogether, the tests are inconclusive. H_6 (if the influence of country's own CIT rate is negative, the influence of its rival's CIT tends to be positive, and *vice versa*) is supported, since OLS and fixed effects are inconclusive and the other estimators are supportive. H_7 (if country's CIT rate exceeds at least one half of its rival country's CIT rate, then the provision of investment incentives is a decreasing function of the return on investments) is rejected because of both panel data models.

One hypothesis is rejected, one is supported, the other cannot be rejected; hence our evaluation of Scenario 2 will be similar to Scenario 4: the evidence is inconclusive.

Scenario 1. Concerning this scenario, H_5 and H_6 apply for it as well. The only difference between Scenario 1 and Scenario 2 is that instead of H_7 we now have H_8 (if country's CIT rate exceeds its rival country's CIT rate, then the provision of investment incentives is a decreasing function of the return on investments) which cannot be rejected by OLS and Blundell-Bond estimator, is supported by IRLS, and rejected by fixed effects; so the outcome is inconclusive.⁽¹²⁾

Taken altogether, Scenario 1 is weakly supported, as 2 hypotheses cannot be rejected and one is supported. Note, however, that the support for H_8 in IRLS was derived using very small number of degrees of freedom. Should we take into account only panel data estimates, the result would be inconclusive.

Control variables. Variables *FDI*, *RISK*, and *CLEG* were added to the model to improve the specification and increase explanatory power; nevertheless, we made some intuitive hypotheses about their influence on *INI*: H_9 (country saturated with FDI is less willing to provide incentives), H_{10} (the higher risk of relocation the government feels, the higher incentives it is willing to provide), and H_{11} (countries with poor legislation have to provide higher incentives). These intuitive expectations are obviously out of accord with our results; all three hypotheses are strongly rejected.

To sum it up, we cannot test for Scenario 3, there is no conclusive evidence for Scenario 4 (stronger competition) nor Scenario 2 (weaker

competition), and only very little support for Scenario 1 (cooperation). Therefore, the evidence might suggest that governments' cooperation or supranational coordination could be – to some extent – effective. However, the present author would argue that it is much more probable for Scenario 5 to be valid, i.e., none of the models developed by Havránek (2009) is able to describe subsidy competition reasonably well.

6. Conclusion

The purpose of this paper was to empirically verify/falsify models of subsidy competition and supply of investment incentives developed in Havránek (2007) and Havránek (2009) and critically evaluate similar attempts made by Havránek (2007). Whereas the latter concludes that the optimal investment incentive model can reasonably explain subsidy competition, our results indicate that none of the models can be supported. There is thus no evidence for any significant international competition for FDI. The present author would argue that the contradiction arose mainly due to the following factors:⁽¹³⁾

1. Interpretation of results by Havránek (2007). He found CIT_1 to be insignificant and CIT_2 to be significant – but that finding, in general, does not support the model of optimal investment incentive.

2. Hypotheses tested by Havránek (2007). INI_1 is not monotonous in the size of the domestic market; it is better to use entrepreneurial environment instead. It is also important to test for the significance of RET and k and use *conditional* hypotheses where it is appropriate.

3. Definition of a rival government used by Havránek (2007). Neighboring government providing highest investment incentives does not have to be the rival; much more probably it would be a country with as close $PROD/WAGES$ as possible. Also, the definition of the proxy for spillovers used by Havránek (2007) is inappropriate.

4. Reliance on basic OLS by Havránek (2007). It is more suitable to check also results of panel data estimators for the whole available time span, robust estimators, and different specifications of the models. While Havránek (2007) runs only 3 basic OLS regressions, we try 48 different specifications and employ 5 alternative estimators.

However, we also made multiple simplifications throughout this paper. In the first place, we formulated our hypotheses as linear dependences, although in a few cases the theoretical relationship is rather complex. We used a very simple definition of entrepreneurial environment and in a similar way we derived a proxy for productivity spillovers.

It is also necessary to take into account the nature of the data on investment incentives we have at our disposal; i.e., we are dealing with the attractiveness of incentives and not with the provided amounts *per se*. Also, our definition of the variable *RET* might be seen as oversimplifying and problematic.⁽¹⁴⁾ Another problem with this approach could be that tax holidays (which are considered in the underlying models) are not the only form of investment incentives appreciated by investors.

Possible caveats can be also raised to our research methodology; most notably, the discretion in defining weights for different specifications (see Table 6 and corresponding comments) or standard testing of hypotheses in the case of OLS when normality was previously rejected, though. In spite of that, the present author would argue that it is safe to say that – using the World Competitiveness Online Database – there is no significant empirical evidence supporting models presented in Havránek (2009). The only stronger claim that we can formulate based on the analysis of this data is the following: It seems that by means of FDI incentives *governments try to compensate MNCs for high labor costs and low productivity in their countries*.

Therefore, even if the models clearly distinguish cases of weak competition, cooperation, and fierce competition, all of which are empirically testable, we cannot make a strong conclusion about the nature of the competition with the data which we have at our disposal. There is some minor evidence for cooperation, but this result is rather unstable. Nevertheless, we suggest testing the models using different datasets and different methodologies.

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Notes

- (1) The simplification behind these hypotheses is assumed linearity of the relationships.
- (2) H_8 is in fact a stronger version of H_7 , thus the theory would suggest that if Scenario 1 is supported, Scenario 2 should be technically supported as well. Of course, in such a case, Scenario 1 would be selected as the “proper” outcome.
- (3) Data on those countries from this source are so incomplete that they cannot be used for any reasonable panel study.
- (4) In this paper, we consider only positive FDI spillovers.
- (5) This can become a subject of criticism since the function is defined *ad hoc*, without any elaborate underlying theory. However, we believe that the intuition in this case is reasonable enough.
- (6) The term “entrepreneurial environment” is only a label used by Havránek (2009) to refer to the aforementioned formula, not the other way round.
- (7) On the other hand, if greenfield investments account for only a small portion of total (potential) FDI inflow, it might be tempting for indebted governments to provide incentives to foreign investors that are willing to buy privatized companies, and thus bring quick cash.
- (8) The *best* specification is not crucial for our later discussion. Its purpose is to extract the closest-as-possible empirical match for the response variable; it can be also viewed as a robustness check (abrupt changes of polarities or significances might suggest problems with the *complete* specification).
- (9) Application of these conditions will introduce slight unbalancedness to the corresponding specifications, but it should not be systematic.
- (10) Nevertheless, it should be noted that if we took into account only the *complete* specifications, our results concerning the support for scenarios would not change.
- (11) In most cases, the definition of weights does not matter a lot (and excluding basic OLS as least reliable would not affect the results at all); therefore, we will continue to weigh the methods equally, for simplicity.
- (12) Moreover, as H_0 is theoretically a stronger case of H_7 , a support for H_8 should also imply support for H_7 . Since this is not the case, our findings are consistent with Scenario 5.
- (13) Of course, Havránek (2007) was testing an older form of the models; however, the basic relationships remain similar.
- (14) Note the simplifying assumption of zero discount rate in Havránek (2009).

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Appendix

Table 7

Acronyms of regression variables

Variable	Explanation
k	The relative price of labor adjusted for different productivity.
spilla	Spillover absorption capacity with $b = 0.25$.
spillb	Spillover absorption capacity with $b = 0.50$.
tgap	Spillover absorption capacity measured as technology gap.
ent	Relative quality of entrepreneurial environment.
cit1	Corporate income tax rate.
cit2	Corporate income tax rate in the rival country.
ret	Return on investment.
ini1	Attractiveness of investment incentives.
L.ini1	Lagged value of attractiveness of investment incentives.
ini2	Attractiveness of investment incentives in the rival country.
fdi	Stock of inward FDI divided by total GDP.
risk	Risk of relocation of production from the country.
cleg	Quality of competition legislation.

Table 8

Table of correlation coefficients

	k	spilla	ent	cit1	cit2	ret	ini2	fdi	risk	cleg
k	1									
spilla	0.2324	1								
ent	0.0076	-0.0340	1							
cit1	-0.0789	-0.0719	0.2586	1						
cit2	-0.0871	-0.0189	-0.1140	0.1641	1					
ret	-0.0568	-0.0223	0.0005	0.2660	0.2651	1				
ini2	-0.0834	-0.1292	0.1771	-0.0329	-0.3470	0.0203	1			
fdi	0.2377	0.2676	-0.1968	-0.4652	-0.0150	-0.1580	0.0808	1		
risk	-0.0623	0.0114	0.1071	0.0949	-0.1340	-0.0753	0.2552	0.0183	1	
cleg	0.2018	0.3907	0.0280	0.0510	0.1266	-0.0209	-0.2474	0.2482	-0.0962	1

Fixed effects estimator, 1997-2005, all observations

Table 9

	Complete	Spillb	Tgap	Cond. 1	Cond. 2	Cond. 3	Best	Pure
k	0.345 (1.62)	0.416† (1.95)	0.437* (2.06)	0.0569 (0.16)	0.387† (1.74)	0.907* (2.18)	0.354† (1.68)	0.406 (1.60)
spilla	5.675* (2.31)			11.58** (2.76)	5.481* (2.15)	0.474 (0.11)	5.583* (2.33)	9.444** (3.27)
ent	0.162** (2.76)	0.169** (2.86)	0.167** (2.83)	0.139* (2.25)	0.165** (2.79)	0.182 (1.12)	0.162** (2.81)	0.266** (3.92)
cit1	-0.0190† (-1.68)	-0.0189† (-1.65)	-0.0168 (-1.47)	0.0265 (1.59)	-0.0156 (-1.30)	-0.0163 (-0.90)	-0.0175† (-1.76)	-0.0133 (-1.02)
cit2	-0.000245 (-0.02)	-0.00247 (-0.23)	-0.0035 (-0.32)	0.0164 (1.04)	0.00181 (0.17)	-0.0335 (-1.36)		-0.0127 (-1.00)
ret	0.026 (1.02)	0.0220 (0.85)	0.0170 (0.65)	0.150** (3.73)	0.0365 (1.39)	0.0662 (1.46)		0.0115 (0.39)
ini2	0.0174 (0.37)	0.0256 (0.54)	0.0291 (0.61)	0.117* (1.73)	0.0301 (0.63)	0.0856 (1.03)		0.0126 (0.22)
fdi	0.269 (0.91)	0.307 (1.03)	0.326 (1.09)	1.696† (1.87)	0.707† (1.91)	1.559† (1.97)		
risk	-0.323** (-7.25)	-0.334** (-7.45)	-0.339** (-7.62)	-0.303** (-4.76)	-0.330** (-7.32)	-0.312** (-3.98)	-0.325** (-7.40)	
cleg	0.513** (7.14)	0.517** (7.13)	0.510** (7.02)	0.560** (4.90)	0.523** (7.03)	0.734** (6.50)	0.498** (7.13)	
spillb		2.336 (0.56)						
tgap			-0.931 (-0.92)					
Constant	0.867 (1.07)	1.093 (1.35)	1.520† (1.66)	-2.876* (-2.25)	0.326 (0.38)	-0.509 (-0.34)	1.172† (1.94)	5.175** (6.85)
Observations	396	396	396	160	385	163	396	396
R ²	0.360	0.350	0.351	0.532	0.372	0.491	0.357	0.088

t statistics in parentheses

† p < 0.1, * p < 0.05, ** p < 0.01

Blundell-Bond estimator, 1997-2005, “outliers” excluded

Table 10

	Complete	Spillb	Tgap	Cond. 1	Cond. 2	Cond. 3	Best	Pure
L.ini1	0.353** (4.17)	0.344** (4.14)	0.301** (3.59)	0.467** (4.07)	0.363** (4.36)	0.357** (4.19)	0.348** (4.27)	0.562** (6.78)
k	0.0635 (0.20)	0.0988 (0.32)	0.0779 (0.25)	-0.0289 (-0.05)	0.0767 (0.24)	1.102* (2.41)		0.000289 (0.00)
spilla	-4.681* (-2.10)						-4.625* (-2.09)	
ent	-0.106 (-1.41)	-0.0544 (-0.75)	-0.0431 (-0.60)	-0.0067 (-0.07)	-0.0591 (-0.81)	0.0316 (0.67)	-0.118† (-1.93)	-0.0753 (-0.89)
cit1	-0.0302† (-1.75)	-0.0256 (-1.49)	-0.0244 (-1.45)	-0.0595* (-2.11)	-0.0251 (-1.43)	-0.0716** (-3.01)	-0.0276† (-1.75)	-0.0160 (-0.86)
cit2	0.00675 (0.45)	0.00926 (0.63)	0.000311 (0.02)	0.0181 (0.60)	0.0108 (0.73)	-0.00773 (-0.36)		-0.0108 (-0.67)
ret	0.0688† (1.84)	0.0724* (1.98)	0.117** (3.15)	0.123† (1.76)	0.0799* (2.12)	0.0886 (1.49)	0.0670* (2.05)	0.0971* (2.47)
ini2	0.188** (3.17)	0.177** (3.01)	0.169** (2.94)	0.00508 (0.05)	0.182** (3.05)	0.206** (2.83)	0.183** (3.26)	0.176** (2.66)
fdi	0.165 (0.32)	0.325 (0.63)	0.729 (1.38)	-0.353 (-0.24)	0.428 (0.77)	1.511† (1.70)		
risk	-0.223** (-4.10)	-0.235** (-4.37)	-0.249** (-4.67)	-0.161† (-1.83)	-0.233** (-4.28)	-0.172* (-2.10)	-0.217** (-4.13)	
cleg	0.175* (2.20)	0.220** (2.75)	0.247** (3.09)	0.135 (0.88)	0.222** (2.74)	0.238* (2.00)	0.173* (2.25)	
spillb		-14.85** (-3.39)		-4.196 (-0.47)	-14.86** (-3.34)	-15.96** (-2.69)		-6.313 (-1.34)
tgap			2.330** (3.90)					
Constant	1.657 (1.38)	1.067 (0.90)	-0.235 (-0.19)	2.665 (1.40)	0.822 (0.68)	1.805 (1.47)	2.032** (2.59)	2.393* (2.18)
Observations	336	336	336	142	333	140	336	336

t statistics in parentheses

† p < 0.1, * p < 0.05, ** p < 0.01

Arellano-Bond estimator, 1997-2005, all observations

Table 11

	Complete	Spillb	Tgap	Cond. 1	Cond. 2	Cond. 3	Best	Pure
L.ini1	0.0433 (0.41)	0.0396 (0.38)	0.0389 (0.37)	0.239 (1.45)	0.0841 (0.78)	-0.0245 (-0.20)	0.0417 (0.40)	0.333** (2.80)
k	0.713* (2.32)	0.694* (2.27)	0.701* (2.29)	0.147 (0.21)	0.614† (1.92)	1.289** (2.60)	0.708* (2.34)	0.520 (1.41)
spilla	-1.617 (-0.50)			2.546 (0.43)	-1.756 (-0.54)	-5.807 (-1.13)		0.00875 (0.00)
ent	0.198† (1.83)	0.189† (1.75)	0.204† (1.89)	0.108 (0.64)	0.170 (1.54)	-0.0404 (-0.18)	0.204† (1.91)	0.104 (0.81)
cit1	-0.0229 (-1.49)	-0.0219 (-1.43)	-0.0233 (-1.52)	-0.0310 (-0.99)	-0.0207 (-1.30)	-0.0401 (-1.58)	-0.0220 (-1.51)	-0.0129 (-0.71)
cit2	0.00108 (0.07)	0.00188 (0.13)	0.00201 (0.14)	0.0474† (1.67)	0.00509 (0.33)	-0.00891 (-0.43)		-0.0124 (-0.71)
ret	0.0447 (1.33)	0.0429 (1.29)	0.0486 (1.40)	0.118† (1.84)	0.0724* (2.03)	0.0510 (0.88)	0.0497† (1.69)	0.0696† (1.82)
ini2	0.144** (2.62)	0.141** (2.59)	0.146** (2.67)	0.0430 (0.45)	0.162** (2.83)	0.143† (1.86)	0.146** (2.74)	0.191** (2.90)
foli	-0.0464 (-0.14)	-0.0514 (-0.15)	-0.0615 (-0.18)	0.513 (0.33)	0.576 (1.08)	1.364 (1.62)		
risk	-0.221** (-4.53)	-0.225** (-4.62)	-0.217** (-4.48)	-0.194* (-2.31)	-0.240** (-4.68)	-0.237** (-2.90)	-0.220** (-4.56)	
cleg	0.397** (5.31)	0.395** (5.30)	0.395** (5.27)	0.459** (2.68)	0.397** (5.01)	0.501** (4.14)	0.396** (5.39)	
spilib		-7.215 (-1.38)						
tgap			0.288 (0.23)					
Constant	1.182 (1.05)	1.26 (1.14)	0.952 (0.75)	-1.011 (-0.41)	0.399 (0.32)	1.69 (0.95)	1.044 (1.15)	2.715* (2.34)
Observations	308	308	308	124	299	126	308	308

t statistics in parentheses

† p < 0.1, * p < 0.05, ** p < 0.01

About How Did the First Ever Big Economic Crisis Look Like

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Abstract. *The obsession about the current economic crisis is pretty understandable. But being obsessed about the current moment, in the economic crisis matter, might become a scientific mistake. As for instance, the real results of the current period will be available in just a couple of years. Moreover, we used to believe up to recently that the previous big crisis of 1929-1933 might be nearly an accident and would not repeat, due to its lesson applied: the policy makers made functional, vigilant, diligent and acting. May be such a lesson was not enough. But equally, every crisis would claim a specific lesson of this kind, and the present one would do the same, whereas the 1929-1933 and current crises lessons would not be enough, partly because the economic history has more in such a topic area. In other words, let us more deeply search for crisis elements in the world economic history.*

Keywords: economic crisis; national economy; price system & standards; macrosystem; the international gold standard; utilities; barter system of exchanges.

JEL Codes: E00, E52.

REL Codes: 10B, 11B.

The facts described below belong to some author's older research⁽¹⁾ now coming up in an apparently beneficial way. However, this is the very question remaining. Let us underline that the below developing story is about a historical time very different than the modern economy era. This is a story of a really different world. It might be viewed as "science-fiction", here including the science-fiction rule of teaching lessons for the current world when coming from another time.

As in details, there is about a so old time that historical information and data sources are almost fully missing and that the other question subsisting is how representative could it be for the present.

1. The starting point: the *Walrasian* theory of prices

The so-called *Walrasian theory*⁽²⁾ of prices might be shortly described by two contexts (Guitton, Bramoulé, 1987). Firstly, whenever the capital letters A, B and C individually identify three market goods and the following equalities do exist:

$$P_A = P_B;$$

$$P_B = P_C,$$

where:

P_A , P_B and P_C are the corresponding goods market prices, there automatically results that:

$$P_A = P_C,$$

as taking into account the unique restriction called the *rational* economy developing. As a corollary, when inequalities, instead of equalities:

$$P_A > P_B;$$

$$P_B > P_C,$$

there also automatically results that:

$$P_A > P_C,$$

of which, the above restriction remains the same and lonely one.

Let us also have the other context:

$$P_{B/C} = P_{B/A} / P_{C/A}$$

in which $P_{B/C}$, $P_{B/A}$ and $P_{C/A}$ are the corresponding price reports among the same three goods. These last above equality means that every market good can operate on the same market as a *price standard* for the rest of goods.

To be noticed that the author makes clear a *universal* truth, meaning that these both are valid for all markets, from the most primitive to the modern market economy context ones; actually, from the *barter exchange* to the *money base* ones.

This is equally significant that both postulates contain the prerequisites of *individual property* on every market *good* and *free option* of every owner about goods owned (to sell them or not on the same market).

2. One more starting point: a double mathematical model

Let us also have a *pair of models*, basing on the above described Walrasian view:

$$(I) aA \Leftrightarrow bB \Leftrightarrow cC \Leftrightarrow \dots \Leftrightarrow mM \Leftrightarrow nN$$

$$(II) aA \Leftrightarrow nN$$

$$bB \Leftrightarrow nN$$

$$cC \Leftrightarrow nN$$

$$(\dots\dots\dots)$$

$$mM \Leftrightarrow nN,$$

in which:

- A, B, C, ..., M, N gather the totality of market exchangeable goods within the whole market space;
- and a, b, c, ..., m, n are the corresponding quantities of the above nominated goods, all making a unique exchangeable value.
- $\Leftrightarrow$ is proper to this model only. This is something more than the „=” sign for the basic *Walrasian* model. It also means that the respective equality is verified by the fact that all goods and quantities of the left and right sides have certainly been exchanged once or more.

Let us have some further aspects *common to the two models* (variants):

- each one belongs to a unique market space, as already reminded above, a real *macrospace*, in the current modern understanding;
- so, each model represents a specific *price system* for its corresponding market.

As for the *uncommon* side of these models, (I) is called *horizontal*, as it is reported, and (II) is, on the contrary, called *vertical*. It is true that horizontal and vertical have already their senses in the current economic language: *horizontal* means reports among *final goods* and corresponding *industries*, whereas *vertical* means, on the contrary, reports and links among industries and activities competing to one single final good.

Or, in such circumstances, only the (I) model is horizontal on both above described understandings: the one of the reported models, the other one belonging to the usual economic view.

But even more important than this is the fact that the two *price systems* show themselves as radically different from each other that any presumable transition between the (I) and the (II) models would take a very long time (hundreds and even thousands of years), here including in economic terms. This is another unusual aspect for the current and common modern economy understanding, for which just one decade time might contain several periods of boom, recession or stagnation.

3. The model (I): the primitive *barter exchange* market system

In the above description, the model (I) will certainly describe the oldest economic system of all times: the *primitive barter exchange market system*. As working in the *Walrasian* context, all market *utilities* (marketable goods) will be put into value up to reaching a *unique value standard*, as the model suggests for all items. Or, this would be a quite hard and difficult process for the market and all its operators. As in details:

- (a) individual *needs* will be satisfied by corresponding *utilities* – the *utility (1)* is searched by an individual, while it belongs to somebody else on the market;
- (b) the *utility (2)* is, on the contrary, in the possession of the individual (operator) searching for *utility (1)*.

Once more, this price system here appears as *horizontal* as it also describes quantitative reports among different final goods destined to satisfy different needs of consumers. The system misses the *vertical* side of the economic system, but it is equally true that the vertical dimension of the economy was much underdeveloped at that time and had enough time to wait for a long development towards the modern ages.

On the other hand, the slowness of the primitive *barter exchange system* was partly just apparent – in reality, individually trying to access *utility (1)* starts a plurality of transactions among several other market goods and utilities, and certainly relationships among several individual goods' owners, as market operators. Or, the *barter exchange* internal dynamic works out its whole appropriate *economic system*, together with a convergence and *price stabilising* trend.

The essential aspect to be here understood is that any *price stabilization* and dynamic convergence necessarily requires that the market goods remain the same, unchanged and misses any principal market openness to entries and/or issues. As the primary consequence, the *price system*, as it is, would also miss all resources and ways of development, as available in the modern economy. This macrosystem could, at least, accept some other market items, as similar to

the already existant ones – see the example of diverse grain species for consumption and trade, but that will be all.

As put in danger by the development context, the ancient *barter macrosystem* was strongly protected, on the other hand, by specific factors forcing the *market closure*. As for instance, missing the real economic resources for development, as typical for primary moments of the market system. Plus, the market itself stayed far from the much later modern market economy, while the economy at that ancient time was still prioriting the simpler *natural* economies of *self-consumption* – satisfying the own individual utilities.

Let us understand that such times made the market system limited in both facts and people's understanding. People even might doubt about *market*, as a real alternative to the much older *self-consumption* economic activity. And as for the *market* system itself, the same above price system and model were corresponding to a *collective memory*, the latter corresponding to old restricted *communities*, as appropriate to the ancient times.

In such conditions, the above study of the *barter exchange* economic system had started from missing money, but found that it rather was one of a very *narrow macrosystem* – it can be called the “*cell-market*” – and this one completely closed. Overall, the same economic system was a symbol of missing all ways of modern development: the technical, economical, social and even mental ones.

The mathematical model and the price system explicitated by is here backed by an essentially different world than the one that we meet around today. Plus, such an information provided by the model (I) compensates the lack of historical sources. We are in this model so far from the openness and globalization of our current economic world; so far from the price inflation and from the so long and complex material and financial flows.

As in particular, the *price stability* of the *model (I)* will never be found elsewhere, and especially in the current economy. Plus, now we know exactly the full context and requirements of the *price stability* than we sometimes expect or search for.

4. The model (II): towards the *international gold standard*

The *model (II)* appears different shape than its pair and let a fully different world behind. Its “vertical” mathematic construction has nothing in common with the economic sense of the word, as already mentioned above. Though, an essential common feature is here preserved: it is the *barter exchange* economic system ruling the economic activity and the model's general development as well as in the previous model (I).

Despite all these, this is about the *international gold standard*⁽³⁾. But let us understand the *model (I)* turning into model (II):

- (a) the N good (utility) leaves the market utilities line for a special position of *general equivalent*, which intermediates all exchanges around – exchanges involving the other goods;
- (b) so, the (1) and (2) utilities, as specific for *model (I)*, vanish, this meaning the disappearance of shorter or longer successions of exchanges among other different goods;
- (c) finally, all exchanges among goods, but the ones involving N, leave the market activity;
- (d) but equally, the N's turning into a *general value equivalent* must be seen as a complex and long run process in itself⁽⁴⁾.

The model (II)'s transparent shape was able to build up the *money-base* market, as successive for the *barter exchange* system, plus a finally explicit link between the two basic economic systems, in such an advanced step. The so called “*gold money*” incipient period of the *gold standard* identified this real economic link. Actually, the *gold metal* had become the general value equivalent of the other market goods, as playing on the basic barter exchange system rules, despite the later modern money arrival thisway – in other words, there was not the money-based economy choosing the gold metal, but exactly the opposite.

So, there must be here admitted that the *barter-exchange market economy* is supposed to be a (much) more complex issue than accepted so far, in the economic thinking. It had its early periods, in the ancient history, and advanced ones, in the modern age (Andrei, 1999).

Back to the model(II), the essential difference as against its pair model (I) is that nothing stops here any new exchangeable item enter the existing market through encountering the N value equivalent. This means regaining the full extension capacity of the same market, as ensured by the general value standard (equivalent). This is a new market system, so a really new world in process. Plus, this is what the model fails to explain: its “n” number of items is much larger than the same explaining the previous *model (I)*.

And let us have some more description about this new modern system, as a full retort to the ancient *barter-exchange* one. First, there is to figure out a tremendous extension of the old „*cell-markets*” up to the *post-Ricardian* picture of the market economy – as *national-international* shape of the market.

Second, the *price system* reported by the model does no longer belong to limited human communities, but it is really taken over by the *general value standard (N)* itself – this identifies the already above mentioned extension capacity of the market.

Third, despite its particular capacity, as appropriate to the modernisation of the economy, this system also brought in an important intrinsic contradiction, bared by the N market item, once more – this was between its two capacities: the *market utility*, as natural, and the *market value equivalent*, as new and artificial. Let us explain that through what was called the “*Turgot axiom*” (Jinga, 1981): *exchanges are possible between items keeping their own market values, as exclusively*.

The result was a *sui-generis* “*competition*” among several items, as the other face of the artificial selection which took long centuries of history. This finally conducted to the *general unique market value equivalent*, after having started much earlier from “*all individual goods had such a role*” (Guitton, Bramoulé, 1981). Grains, animal skins or some sea shelves of primitive times have been replaced in time by metals, and then these encountered the same competition process among themselves. In reality, this “*competition*” was no more than the *Kantian* view on the report between the phenomenon – see the “*competition*” – and thing in itself – exercise of the value standard performances be each presumable good N. Reinforcing the good N industry and supply was sometimes playing against its special position on the market.

The here revealed *contradiction* starts when the market value equivalent item is required to preserve its own value whereas, in reality, it will neglect its own natural utility by being used to intermediate the other items’ exchanges. As the result, these *partial market value equivalents* were expected to get bankrupted one by one on the market, and first in the individual market operators’ confidence.

But those partial bankruptcies were not cumulating a big fail of the market itself. On the contrary, fewer partial market value equivalents helped the marketplaces’ geographic interconnections and market spaces’ extension, in way of selecting the unique and general market value equivalent. In a word, on the one hand the artificial selection and “*competition*” among *partial market value equivalents* were selecting the *general* market value equivalent; on the other one, the old market spaces were extending, unifying and structuring a *world-wide market*. As another result, the *nation-wide market* and macrosystem was supposed to identify when the *international-wide market* did the same – there was no *national*, in the absense of the *international* market.

However, a superficial picture of such a tremendous post-neolithic history yet is here risked for the above description. The *credit* concept is as antique, as even preceding *money* in time. *Taxation* belongs to the antique States, but not only – it belongs to all social and politically organised community. *Money* made its appearance in their antique shape together with the metal market value equivalents, but it had been preceded by *pre-monetary* metal shapes – see

jullery or weapons, in the antique Greece, or the “balance” in the marketplaces of the antique Rome. The *round coins* were first minted in the sixth or seventh century BC⁽⁵⁾, in Lydia (Turkey), bearing the authority’s inscription. *Money*, once more, in the ancient times, was keeping not only a commercial significance, as nowadays.

Nevertheless, money, in its antique primary shape and function, was keeping far from replacing the old barter-exchange system, as there yet might be kept in mind. Back to the modern times, in the eighteenth century two *metal value standards* were known world-wide: *gold* and *silver*. They were even “sharing” the world market, namely *gold* was operating in Europe and America and *silver* in Asia and far East (Jinga, 1981). One century later, silver was leaving the “competition”, in its turn, on the same scheme of overproductions and oversupply, as its precedent metal value equivalents in the previous periods⁽⁶⁾.

That finally was the time for *gold*, as a *world-wide general equivalent*. And not only. The gold metal “created” and cleared the way for the *modern money*, as the retort to both the ancient primitive money and the barter exchange system. The modern money was international and national, plus *this was the modern international money replacing the barter exchange system forever*. The modern money finally brought in the market economy, but let us remind that the international *gold standard* was still barter exchange system, as the most advanced period and part of this old system.

Despite all these above, the gold standard might keep the limits of just a theory. There are famous names denying it as a myth, see for instance Robert Triffin (1960) or Ronald McKinnon (1988, 1992), as Americans of different generations of authors. Much earlier than that, even David Ricardo is mentioned as part of a project for replacing the gold market value equivalent by a so-called “general price index”, which failed at that time (Rist, 1938). On the other hand, the great British philosopher and economist of the late eighteenth century David Hume was the first top name for defending the gold standard (Jinga, 1981). Much later, in the post-war era, the French economist Jaques Rueff (1973) was even reclaiming the system’s revival for remaking its world-wide financial and monetary order. The Hungarian Janosz Fekete (1973) was proposing, after the Breton Woods era (1944-1971), a new *international monetary system (IMS)* basing on a modern gold standard⁽⁷⁾.

The *international gold standard* left the vicinity of the primary and primitive barter exchange system, but it remained its relative, at least as the second representative working system of the *barter exchange economy*. And that because everybody agrees that the money is “*real money*” only since leaving its metal base (Jinga, 1981⁽⁸⁾). The gold standard kept “nearby” the old

barter exchange system by its long run *price stability*⁽⁹⁾. Actually, it was a kind of *barterexchange plus money* economic system.

It was the big 1929-1933 *economic crisis* kicking off the gold standard from the world economic history⁽¹⁰⁾. But this is not the crisis that I am ready to talk about, despite the high interest on it for present. On the contrary, let us keep on the same gold standard time for a while. It was and sometimes still is a price stability myth for its aftermath of price inflation and currency devaluations, but gold was hunted, at its time, with malefic consequences in America and South Africa. Let us also remember the Victorian era penetrated by the *fetishism* of gold on the market, by the old liberalism of “*laissez-faire*” and the little State *money house* (typical for the *gold standard*), instead of the later big *central bank*, and even by a Marxian socialism obsessed by the “*substance*” of value (Marx, 1960)⁽¹¹⁾.

The yellow metal looks like a noble character first leaving in his “ivory tour” in the ancient times, later on getting out in the middle of a human society that he come to serve even through his own sacrifice. The gold value system has been accused sometimes for “*liquidity contraction*”, as for instance, but there is not to be forgotten that it has never stopped or blotted the ways to modern financial systems and financial market. Much later on, in the modern times, he left back to the same “ivory tour”, so *gold* stays special in the value matter – so was in the ancient times and ever before the modern economy time. Gold had offered the *gold standard* with its first IMS (1818-1931), while the other IMSs were coming to survive for much shorter in its aftermath⁽¹²⁾.

As a preliminary conclusion for these above lines, *gold* succeeded to be a distinct chapter of the economy, economic history, as well as of the human culture and society. It might be a myth of its aftermath time, as underlined above, but let me here find more important what it was for its previous times. Shortly, the century time of the gold exchange standard has been preceded by at list one or two milleniums time of gold, as a *partial exchange standard*, together and competing with other metals and matters, as similar standards. In my view, the gold standard was a very *sense* of a whole long economic history earlier developed, whereas theorists debate about whether the history itself has a sense. The gold standard was a different world “between other worlds different from each other”.

5. And where is the “big crisis”?

There is neither the crisis of 1929-1933, nor the current one that I am here talking about, but the ancient times, once more. The model (I) revealed a much different (ancient) world, than the one that we live in. Markets were narrow and

perfectly closed, human communities were narrow, in their turn, there was not too much changes in the social life for long generations. Money and finance were still far away. The model (II) is appropriate for the eighteenth and nineteenth centuries, but founded by a huge amount of facts since the earlier times, as well. Let us keep in mind here the above idea of the shift between the price systems reported by the two models basing on a quite long process of enlarging the primary “cell markets” up to the *post-Ricardian* market economy of the *national-international* market spaces.

The scenario of the *first big economic crisis* of the world economic history comes up in the moments of falling the boundaries of the “cell markets” and corresponding *macrosystems*. Of course, there is huge lack of historical information about, making this scenario approach just our imagination, but this might be strongly feeded by the conviction that there was a strong and consistent system of values in a similarly strong “earthquake” at that time.

I say that there is no historical information, except for one historical aspect that everybody knows about the ancient history: this is the *fourth division of labour*, the appearance of the *trade* activity and *traders*⁽¹³⁾. There can be figured out these last people gathering merchandise and carrying it for long distances to other small communities.

Then, when this process was enlarging, a quite new problem was coming up to the host communities. Economically, the new coming in utilities had to be evaluated and compared to the locally existant ones. Which was a problem increasing as much as the older utilities were becoming a minority on their own marketplace and in their own price system. Plus, their earlier collective memory price system was wiped out. But, what was and finally had to be the new exchange value system? Actually, how was it working?

6. ...and its lesson to be learned...?

So, let us limit to the *traders* entering the “cell markets” context and remark that:

- This crisis, here imagined, would be appropriate to the *market* and exchange activity, and had nothing to do with the self-consumption, at least as much as the crisis of 1929-1933 has not affected at all the “communist heaven” of the Soviet Union.
- That crisis would be appropriate to the market process, once more, as a crisis of *valuation*, very similar to a financial crisis, without financial markets and financial instruments, even without money – this might be a sign that these artificial instrument are not compulsory for crises.

- The crisis theorists yet argue that this would generally be the result of intrinsic processual contradictions around. Other theorists and ideologies claim social contradictions among social classes and groups, as the expression of economic processual contradictions. Or, the *antique crisis* – whether it has existed – might demonstrate that it did not need neither business cycle, nor finance, capital market or capitalism. Moreover, there can be seen no intrinsic processual or social contradiction in such a context.
- Except for what might make equally today another context, the one of appearances – the apparent social contradictions among people. That was, at that time, the *trademen*, as new negative characters of the story. So, it is not too complicated to imagine local people, especially political elites, blaming these “allions” coming from elsewhere to disturb their nice and peaceful life with their “dreadful spirits” carried. As much as trademen were “allions” in a world full of fear and black spirits, resistance might increase, and so, let us notice, the historical truth was rather helped to stay far from its social understanding. There might be similar for modern times crises, when some ideologies show to the wrong direction of understanding, so they hide the truth.
- There can also be imagined that the ancient crisis, as much as its facts, would have produced a social psychology of the “large gap” and “end of the world”.
- The same as, paradoxically, in reality, crises are based on progress premises, rather than on processual or social contradictions. I mean, for this particular case, that facts and events achieved much later on, in the modern economy of the eighteenth and nineteenth centuries (the *gold standard*), might have exercised a huge pressure on the economy of the ancient times (the early *primary barter exchange system* and its free market). In another description, the latter unique matter exchange standard was putting pressure on the earlier exercise of different and diverse partial exchange standards of the primitive markets.
- Unfortunately, again, the historical sense of the crisis in way tends to remain hidden for the generation in place. The lesson to be learned by the society’s experience comes later on, but this ancient crisis is still a particular case and we will come back to it below. As strictly for the crisis time interval, this can be the “narrowed mirror” of the much larger events and history to come. Clarifications about the real historical events might come (much) later on, in other and obviously different moments.

7. Some specific of the ancient crisis:

- The ancient crisis regarded *market*, *valuation* on it and its *getting open* to other markets together. It is a kind of “*globalization*” of the ancient economy. Scholars argue that the world economy has meat several historic dynamics of globalization. We currently meet a globalization process, but this is not a crisis in itself any longer. That is due ot its experienced precedents. Or, the antique world would have meat almost the same as for a quite new experience threatening a whole values system in place.
- There are two important specific for the ancient crisis, as different from the modern economy ones. Both of them diminish the position of the market for this society, so the size of the crisis itself, crisis becoming non-characteristic for such an era. First, it is the much more important alternative of the *self-consumption (natural) economy*, this way an economy based on merchandise exchanges might remain a “dead alternative” to the people’s perception – as for the modern market economy times, things would be much different facts, development and people’s perception. Second, the market space of the “cell markets” was still too narrow for a transparent crisis scenery, as it was the case of the modern economy, once more.
- The same specific of this old crisis would have resented both the huge progress towards the new barter exchange price system pressure (as underlined above) and the slowness of the economic dynamic. I believe that these contradictory aspects made the sense of this crisis stay so far in time and unclear for so many generations. This might not be the case of a modern history moving much faster by definition. Nowadays, the crises come and go outlining their specific experiences and building up a very set of lessons to approach the crisis matter. As for instance, the 1929-1933 period experience has obviously been that of highlighting on the need of interventionism and the State’s role in the market economy. As for the current crisis, the lesson to be learned expects its clarifications, but these latter will certainly come up in a horizon of time. On the one hand, this is expected to be different than the one of the last twentieth century, on the other one, the current crisis will be percieved as a powerful one, as much as its *post-factuum* lesson to be learned will be significant. On the contrary, a crisis ending fast and with little significance would (currently) not be the “big crisis” that we thought we had meat.

8. Brief concluding remarks

Let me remind, first, that all these above are nearly a fiction story – the economic thinking is also able to make fiction literature, and why not to be thisway(?). But, once taking into account the ancient crisis as a reality, there are lessons to be learned for the current world. So, the modern economy is characteristic for crises as much as it is market and open economy, whereas the opposite of these make any crisis impossible or, at least, non-characteristic. However, the barter exchange economic system is proven as much more complex issue than thought so far.

Crises need not necessarily capitalism, business cycle, financial markets or financial titles; not even processual or social contradictions. On the contrary, all crises indicate progress and essential transformations and turning points to come. And these might stay hidden for a while, whereas the social attention during the crisis period might be distorted to other visible, but unessential events.

Finally, a crisis does not end the world, so it ought not to be approached in fatalist ways. The crisis proves itself as strong as its *post-factuum* lesson to be learned and experience to be learned from comes to be important. Here there are (and were) also false crises during the modern economic history. Events repeating during history do not repeat crises, and it also would be a very mistake approaching a new crisis by old tools.

Notes

- (1) See Andrei (1999 and 2007).
- (2) Léon Walras is a French economist of the nineteenth century, belonging to the Marginalist school of thinking.
- (3) In 1818, *Bank of England* was defining the *gold convertibility* of the Pound Sterling for the whole British Empire, in which there was “no sunset” during the great Victorian era. More than one century later, in 1931, the same *Bank of England* was giving up the same convertibility. That was following a long chain of the same convertibility suspensions in difficult historical moments, especially for war situations, but this time it was forever. Plus, the gold standard bankruptcy was linked to the big economic crisis of 1929-1933.
- (4) As for instance, there was supposed to be a multitude of N goods, as “competing” for such a privileged position. Some of them succeeded to intermediate one or two exchanges among other goods. Plus, such a multitude of equivalent value goods was favoured by the multitude of smaller macrosystems of origin and so on.
- (5) Historians are not yet explicitly sure about this moment so far.
- (6) That scheme was much different from the later story of gold metal leaving the value standard assignment, in its turn.
- (7) The international Breton Woods Agreement (1944) was founding the post-gold IMS that some specialists argue that it would actually be the first one, given the here involved common wish of

States. The same Agreement founded the still working International Monetary Fund (IMF). But given this system's intrinsic contradictions, Robert Triffin (1960), one of the IMF specialists at that time, was proposing another international value standard without gold. Aglietta (1986) was seeing another international money. Cross (1989) preferred, instead of the IMS and its IMF, a set of bilateral agreements among States for limiting the excessive money floating of the time. There was even a Romanian proposal, in early eighties, for international money basing on a plural matters standard without gold. There can be noticed, during seventies and eighties, a huge, but unsuccessful research endeavor for replacing the international monetary order of the Breton Woods Agreement (1944) and of the preceding gold standard with other orders of a similar level of efficiency.

- (8) Also quoting other authors.
- (9) Besides its authentic and by definition *exchange rates stability*.
- (10) Actually, that occurred because, despite all appearances, the strong economic equilibrium brought in by the gold standard was essentially an unstable one – as for instance, it contained an apparent economic neutrality for all nations, which made it strong, but once a nation involved was leaving the system this fact was provoking serious imbalances in the international economic area.
- (11) It remains very interesting quoting an ideologist like Karl Marx with a rather “non-Marxian” reflection like the one in which the modern economy of his time was strictly requiring a “*unique market value reference*”.
- (12) See the examples of the Breton Woods Agreement IMS (1944-1971), once more, and the European Monetary System (EMS), as also regional, but following the Breton Woods IMS model (1979-1999 /McKinnon, 1993).
- (13) The previous labour divisions had been: (1) crop gathering workers, versus hunters and fishermen; (2) shepherds, versus farmers; (3) artisans, versus the rest.

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The Role of Empathy in Developing the Leader's Emotional Intelligence

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Abstract. *The fundamental premise from which we start in this article is that the leader counts, that the top-level people certainly affect the productivity of any organization and that awareness of empathic capacity for each leader, the discovery of the constitutive capacities of the empathic phenomenon and their involvement in particular by them proves to be necessary. The capacity to be empathic is a prerequisite to optimize the leader's relations with subordinates and a condition for effective communication.*

Keywords: self-awareness; empathy; emotion management; emotional intelligence; leader.

JEL Codes: M53, M54.

REL Codes: 14C, 14K.

Emotional Intelligence, or EQ, has become more and more noticeable in recent years, but there are a few people who realize how important it is for success in every area of life. The so-called “weak” features, but which do so much good for our success, must be saved from marginalization, must be taken into consideration by educators, business people, media and, non the less, the leaders. Emotional intelligence is the degree to which an individual is able to react to his own emotions and those of others. This capacity of being able to manage our emotions is therefore “that key factor that makes us start making lemonade, when life gave us lemons, instead of wasting ourselves in bitterness”.

People (leaders) who are managing emotionally – who know and master their feelings and who distinguish and deal effectively with the feelings of others – are in advantage in any area of life, be it sentimental and intimate relationships or compliance with unwritten rules that govern success in organizational politics. Those who have well developed emotional capacity are more likely to be happy in life, to be effective and to master the mental habits that underpin their own productivity. Those who can not control their emotional life and lead internal battles come to sabotage the ability to focus on work and on clear thinking. EQ is what allows the leader to improve his own self-understanding and the way to understand, motivate and support his people.

Simply, emotional intelligence is usually found at people that we call “witty” or having that extra sense that allows them to manage easily through difficult situations. Most problems we are confronted with are the result of faulty communication, understanding of both their own and the others behavior, as well as the inability to see things from the perspective of another person or to absorb the impact of their actions.

In 2003, Daniel Goleman said that the main task of any leader was to channel the emotions of his group in the right direction, and identified five types of relevant emotional intelligence in leadership and management:

1. Knowing their own emotions affects their leadership, feedback and resources: knowing their strengths and weaknesses, confidence in their capabilities, intuitive recognition of those personal actions that affect the others;
2. Managing emotions – self-control: mastery of their emotions and a way to act honestly and with integrity, channeling their emotions to achieve positive goals;
3. Ability to use emotions productively – motivation: emotional tendencies that lead us to personal fulfillment;
4. Empathy – perception and awareness of the emotions of others;
5. Capacity of routing (driving) interpersonal relationships – sociability: forging links with others, settling conflicts, communicating in a clear and compelling way, stimulating others to work cooperatively,

developing skills to analyze and understand the interpersonal relationships; ability to negotiate disagreements and resolve conflict; interpersonal problem-solving plan; opening (positive sense) and ease of communication; getting involved with tact (gently, carefully, politely); being pro-social and harmoniously in a group; being cooperative, participative, helpful, reliable, caring; being democratic in the way you treat others, in official relations.

Empathy is the ability to get an insight or recognize the emotions of others. Empathy does not mean that we live emotions of other people, but it means that we understand other people's emotions from our experiences. Empathy does not mean for one to identify with another thus canceling his own personality, but to get in his mind and soul to understand how he perceives reality. It is built on openness to feelings of others, on the ability to read information from nonverbal channels. We recall that, in interpersonal communication, nonverbal communication is at least 60%. Words can express relatively few of people's feelings, therefore empathy is based on the ability to intuit people's feelings, attributing the utmost attention to nonverbal information: voice tone, mimics, gestures and movements of the person, etc. It was found that 90% of the means of expressing emotional states are nonverbal. For example, a person under stress has an oscillating tone of voice and low intensity, involuntary gestures, proving irritation and anxiety.

As a leader, by means of empathy we have the possibility to better understand our subordinates, to intuit their thoughts and feelings, to anticipate their behavior and even to act on it accordingly. Empathy appears as a specific human need being based on a validated social experience that allows nearings or rejections as a reflex of the possible penetration of the psychology of the other. Goleman pays particular attention to both empathy and ability to manage, lead and handle interpersonal relations, subsumed under the concept of "interpersonal power". Empathy is seen as a capacity of transposition that is imaginative-conceptual, but also emotional, with functions of knowledge, foresight, communication, and performance inclined contagion. Interpersonal power could be defined as a higher self-control state, the ability to overcome anxiety and stress.

Having concluded on the definitions of empathy, S. Marcus believes that the focal point on the empathic concept is the conduct of mentally reproducing the states, thoughts, actions of the other and placing yourself in his position. Empathy is achieved by imaginative-conceptual transposition in the reference system of another – assumption of the way of thinking and achieving the social role – and emotional transposition, the action of activating an experience, substituting in the mentioned experiences by identifying the partner's emotional status, in other words taking over his state of mind.

Empathy, the prerogative of the leader

With regard to leadership, Goleman argues that emotions are contagious, especially the positive ones. Therefore we are open/vulnerable to emotional influences of others, and this can be used by leaders in two ways:

1. Leaders can positively influence the emotional climate of the organization by creating a situation of resonance, in which the organization's members work at maximum efficiency,

2. Leaders may adversely affect the emotional climate of the organization by creating a situation of dissonance, in which members of the organization will feel frustrated and fail to operate at maximum efficiency.

People "emotionally empowered" have the ability to unconsciously imitate the emotions seen in others, having the same mimicry, gestures, tone of voice and other nonverbal aspects. It is a recognition in his/her own way of the other person's feelings. When two people interact, the affection is transferred from the person that expresses the feelings stronger to the one that is more passive. Strong emotional relationships lead to "sentimental synchronicity". Emotional contagion, the power to synchronize emotionally, is encountered at individual leaders, allowing them to organize the group, negotiate solutions, to set multiple personal connections, to determine the cause of negative feelings and personal worries.

When acquiring authority, empathy and interpersonal skills play a special role, but also the participation in exchanging emotional messages, often at imperceptible levels (subliminal) – with a power of contagion and increased influence leading to "synchronicity of feelings". This emotional contagion allows groups to organize, the negotiation of solutions, setting of multiple personal connections, determining the causes of negative feelings and personal anxiety, self-motivation and motivating others etc.

To expect the personal influence to be bracing, beneficial and constructive, a leader must himself be self-controlled. Leaders with increased EQ know how to detect signs of increased anxiety, to determine the stimuli to calm the anxiety arising in the team and to direct others towards an optimistic and enthusiastic state that facilitates solving with the maximum yield various difficult problems.

In any human group the leader is the one who has the full capacity to influence the emotions of all. These emotions lead to performance if they are channeled by the enthusiasm and a low yield if people feel hatred, resentment or anxiety. Subordinates expect from a leader an encouraging emotional connection, they expect empathy. Any management includes this basic rule, for better or for worse. When leaders channel emotions in a positive direction they get what is best from people – this is the effect of resonance. When leaders channel emotions in a negative direction, this produces dissonance, thereby undermining the

emotional foundations that allow people to give their best with maximum efficiency. The efficiency of the leader in covering this basic emotional dimension chiefly determines decay or prosperity for an organization.

The empathic ability has a particular importance in leadership. Capacity to be empathic is a prerequisite to optimize the leader's relations with subordinates and for effective communication. Leader's empathy is a spontaneous and rapid way of entering the mood of the subordinate. Understanding the intentions, feelings and thoughts of others, of course with the approximation permitted by such knowledge, we can have relatively accurate expectations of the partner's behavior, which is extremely important in establishing desirable interpersonal relations and therefore allowing us to create a behavioral strategy towards them. Important is that the leader can correctly evaluate what his subordinate feels, lives, thinks, he can implement his psychological situation and, through effective communication, can create appropriate conditions for influence. Like any ability, empathic ability is an innate psycho-physiological potential but is performed and developed through interpersonal process knowledge, and, if the subject wants it, through self-training.

The primary responsibility of leaders is to induce positive feelings to the people they lead. This happens when that leader creates resonance – a reservoir of positive elements which releases all the best in subordinates. The idea expressed determines us to conclude that the basic role of leadership is strictly related to showing emotions. From this point of view this basic dimension of business management, although often invisible or ignored completely, determines how well all the other things started by the leader will perform. This is why emotional intelligence is so important in the equation of obtaining success in leadership.

The management based on emotional intelligence and then the ability to show empathy is constructed from connections with neurology. Revolutionary discoveries in the field of brain research shows that mood and actions of leaders have a decisive impact on those he directs, and casts a new light on the power that has a leadership based on emotional intelligence and then leader's empathic ability, namely the power to inspire and stimulate passion and enthusiasm, motivation and dedication, to support people, to give confidence and to show understanding for people who leaders work with.

We believe that the primary responsibilities of a leader are to induce enthusiasm, optimism, passion, to have confidence in his subordinates for conducted activities and to create an atmosphere of cooperation in the organizational environment. Each of the emotional intelligence domains, in the form provided by Daniel Goleman, contributes to resonant leadership with a set of essential skills.

Raised areas are closely interlinked with each other in a dynamic relationship. For example a leader can not adequately master emotions if he is not aware of them. And if the leader's emotions are out of control, then his ability to manage relationships suffers. Self-knowledge is the one that facilitates both empathy and self-control, but these two combined allow a better management of relations. To conclude, self-knowledge is the base of emotional leadership. If we can not detect our own emotions we will never know how to handle them. A leader without having developed empathic capacity could never understand the actions of people that work with him, actions largely determined by their emotions. Leaders who demonstrate empathy are connected to their inner signals. They notice how they are influenced by their own feelings and how they affect their professional performance. Leaders who lack a certain empathic capacity in relations with other people may lose patience in response to their actions. Self-knowledge plays a critical role when it comes to a leader's empathy – to understand how somebody else perceives the situation; if one always ignores his own feelings he will not be able to notice the feelings or emotions of others.

Empathy provides the step to the basic responsibility of the leader – to generate resonance. If he is aware of the feelings of others and demonstrates understanding of their feelings and emotions, the leader may say and act in the best way, whether to settle fears, to calm the anger, to join the fun or to cultivate an atmosphere of cooperation and trust. Under these conditions harmonization allows the leader to understand the values and common priorities by which to guide the group.

A leader without the ability to empathize will respond without noticing a wrong tone of his voice, his words and deeds thus creating negative reactions within the group. Empathy, which also means to listen to others and to understand their views and behavior, allows leaders to connect the emotional channels between subordinates.

One of the main characteristics of empathic ability in leadership is that it enhances and prolongs the emotional impact of the leader. Leader's empathic ability level is what determines the efficiency with which they identify, manage and channel the feelings of those whom they relate, thereby helping the group reach its preset objectives. Under an empathetic leader, people enjoy a common level of understanding, share ideas, learn from others, make decisions together and complete the actions. This creates an emotional bond between group members, allowing them to maintain their focus even in the midst of change and profound uncertainty. Without emotional involvement, the alleged leader can only manage the situation – but it does not belong to him – and that is not full leadership.

What would the working implications be for a team when leader is unable to handle his emotions and anger caused by misunderstanding his subordinates' feelings (lack of empathy)? In this case we consider the effects on thought would be disastrous: when someone is upset or angry, he can not remember, learn and even less make a decision.

Another raised feature of the empathic capacity is that empathy is the label we put to the interpretation on the motivational forces that we work with as well as to those that work on ourselves. Emotional motivation concerns strictly the human dimension of the individual. This envisages for the individual to feel as good as possible within the organization, to be appreciated and liked by colleagues, bosses or subordinates, to enjoy prestige, but also be in the consent of the leader. And the leader must inspire to him this only through empathic events because of personal reasons. The motivation is centered on satisfying the emotional expectations, with a major energizing role in each person's work. Giving evidence of trust and understanding for people working with a leader, they may feel slightly motivated by the fact that the one who leads them understands their feelings and emotions gives them tasks and assigns them to assume their roles. When a relationship is an effective collaboration, we increase our ability to get what we want or what we need from the other side. Nobody will give us what we want if they feel misunderstood or attacked. In this case we would be looked at with suspicion or anger. By contrast, whenever the others feel they are in "agreement" with them, they feel motivated. The power of empathy means that if a leader is able to perceive what another person thinks and feels – even if they differ greatly from its own perspective – and his own intuition may be expressed in words, that person feels understood. This is likely to weaken any tension that exists in the working atmosphere and to shape the close collaboration that helps a leader to get what he wants and also contribute to creating new interpersonal relationships.

Empathic capacity evaluation should seek at greater rate attitudes toward achievement, the joys of others and the degree of emotional involvement as well as the satisfaction towards the achievements of our peers. Theoretically, such a thing would seem utopist, but a minimum wisdom will reveal that sincerely enjoying the positive emotions of others, we will be happier, both in intensity and the duration in time. Certainly an empathic attitude ensures the adoption of proper methods of psycho-social interaction, the establishment of effective and productive relationships, a behavior based on skills or interpersonal skills. Motivation takes an important place in all of these issues, given the fact that the lack of it makes difficult, if not impossible, any human action.

One of the most important factors in maximizing the results of an organization is the degree to which its leader is able to create a harmony between members, able to help them reap the full talent of group members.

The empathic ability of the leader, in terms of its strength of coverage, is a feature that contributes to optimize its relations with subordinates. The power of understanding the other, in the act of leadership, becomes the premise for authentic relationships and an appropriate strategy, because in the art of leadership knowledge occupies a special place for those who are ruled. The subordinate, beyond age and function, is, like any man, a living reality, not an abstract notion, he is not only intelligence, but emotion, he is not only reason, but also desire and impulse. Through the medium of empathy a leader can better understand the subordinate; he can have an insight of his thoughts, feelings, behavior and ways to influence it accordingly. Empathy appears as a specific human need, being based on a validated social experience that allows nearings or rejections as a reflex of the possible penetration of the psychology of the other. The need for empathy is corroborated with the need for dialogue, with changing one's perspective with the others. It is the ability to understand the state of feeling of another person (subordinate). Empathy demonstrated by a leader allows him to understand and anticipate the behavior of others. Often, empathic communication appears as a relationship that is nonverbal, default, with a content that is ideational but especially emotional, which allows the leader to easily adapt to the psychology of his subordinates.

An effective leader uses empathy to achieve interpersonal knowledge. The role of empathy in interpersonal knowledge is at least as important as the intellectual factors and manifested in a favorable style (S. Marcus). Defining features of this empathic personality style consists of transposition capacity in the external psychology model (another person) or attitude-emotional projection combined with the perception of reality through the perspective of the external model, just like being the other person. Leaders with a high level of empathy combine emotional experience that is rich and nuanced with its flexibility in terms of cognitive, by using and applying different criteria adjusted to the situation. Regarding knowledge on the team as a whole, varied work, the solution required by individual differences requires empathic knowledge of subordinates.

There are some studies suggesting that empathy plays a critical role in the effectiveness and emergence of leadership. Pescosolido (2002) argues that group members who have greater empathic capacities have a higher chance to emerge as informal leaders in working groups. In a qualitative field study of 20 groups, Pescosolido also found that members with high empathy understood emotional reactions at events of work better and then were able to easily and accurately display an appropriate emotional response to the event – this is the importance of empathy as the ability of leaders. Recognizing the emotional uncertainties of the group members and the role of an appropriate response model, empathic leaders in his study were able to increase satisfaction and performance across the whole group.

“Empathy is one of the most important factors if an authentic leader wants to integrate in a group”. This is a claim of Kellet, Humphrey, and Sleeth (2002) representing the conclusion of their study on the relationship between empathy and leadership. They found that empathy was one of two paths to success in leadership: a way for the execution of complex tasks and the second through empathic events. Although few studies have examined the way to leadership through empathic events, the coefficient obtained suggests that empathy should not be a neglected variable.

Goleman, Boyatzis and McKee argue that empathy is the fundamental power of social consciousness, of social efficiency in daily work. They define empathy as “feeling the emotions of others, understanding their perspectives and active communication and in their areas of concern” and argue that empathy means to transform people’s beliefs that work with the leader into sincere appreciation and then to take smart decisions that transform belief in response, and, most importantly, that empathy makes resonance possible; leaders who are deprived of this empathic ability act only in ways that give rise to dissonance.

Researchers have often noted the importance that transformational leaders have good empathic capacity, being very receptive to the emotions of others (Bass, Avolio, 1994). Dasborough and Ashkanasy (2002) discuss the differences between true transformational leaders and the pseudo-transformational ones. Those who make changes to benefit the organization as a whole are the true transformational leaders, while those looking to make changes for their own benefits are the pseudo-transformational ones. The same two authors argue that leaders try to show emotions to influence their subordinates’ perceptions about themselves. Successful pseudo-transformational leaders are able to perceive emotions and experiences of their followers and to use them only to manipulate. In contrast, the real leaders, the transformational, show their true emotions and create an emotional connection with their followers and subordinates and use those emotions and feelings to add the activity.

Concluding on leadership with a high level of empathy ability, we can say that they are worthy of the following characterization:

1. They are able to create stronger interpersonal relationships
2. They are better at self-motivation
3. They easily motivate the subordinates
4. They perform better as leaders
5. They adapt easier to changes
6. They create a climate of cooperation
7. They are more reconciled with themselves
8. They are trusted by subordinates

9. They create an emotional connection between members of the organization

10. They create resonance.

Unfortunately, empathy, contrary to the importance proven, is often left unused by some of the leaders because when they need it most, they are the least open to it – that is when they are subjected (as leaders) to stress, misunderstanding or discomfort, they are irritated they defend. In such moments their comments automatically reflect their perspective. They hasten to defend their position; they argue their behavior and attack the attitude of others (subordinates), which creates a hostile attitude, stressful in organizational climate. The result is an emotional escalation that ultimately is counterproductive for all involved. Example: “imagine that one day a subordinate arrives at work upset and nervous and speaks in a disrespectful tone – the overall behavior generated by mishaps occurring in his family”. The leader has the momentary temptation to respond in kind, which may be likely to fuel a conflict that at the first spark may explode. Rather than respond directly the leader would have to think for a moment that the purpose of the behavior described above is not to offend others or lead the objectives of the organization to failure. In this case, the smart way for a leader to give response to the situation is to change the registry. Something makes him angry and it is very important for a leader to keep his temper until understanding what is happening, and show understanding. In the case of a true leader we are dealing with a double challenge: to use self-consciousness to calm his growing irritation state, to retain his impulses and to act reasonably towards the instigations, and to seek empathy to understand the other person’s position and in turn, the subordinate would feel liberated and understood.

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The Health of the Economy as a Living Organism

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Abstract. *According to “the health of the common living whole”, economy is a living organism, part of the human society, with which it is integrated in our microcosm environment. As organic component of the living, economy has as a viability criterion of its sense evolution the health of economic life which is in direct compatibility with human health, environment, communications, organizations, families and institutions.*

Flexibility, interrelating, the dynamic interdependencies and integration form the defining features of the living system of economy, able to self-organize through self- support and self regulation.

A healthy economy is an efficient economy, with high productivity and competitiveness. Inverse relationship is not always true.

Keywords: economic organism; flexibility; healthy growth; dynamic equilibrium.

JEL Code: A13.

REL Code: 5F.

1. Integrated wholes

In view of the new paradigm on “the health of the common living whole”⁽¹⁾, knowledge and understanding of the microcosm in which we coexist and succeed one another are organically related to systemic interpretation of the life that concerns the world in terms of relationships and integration⁽²⁾. In the bootstrap⁽³⁾ approach, the common living whole is made up of people, environment, communities, organizations, families and institutions, each forming integrated wholes whose evolution is subject to inter-connection and interdependence of all phenomena – physical, biological, psychological, social, economic, spiritual and cultural (Figure 1).

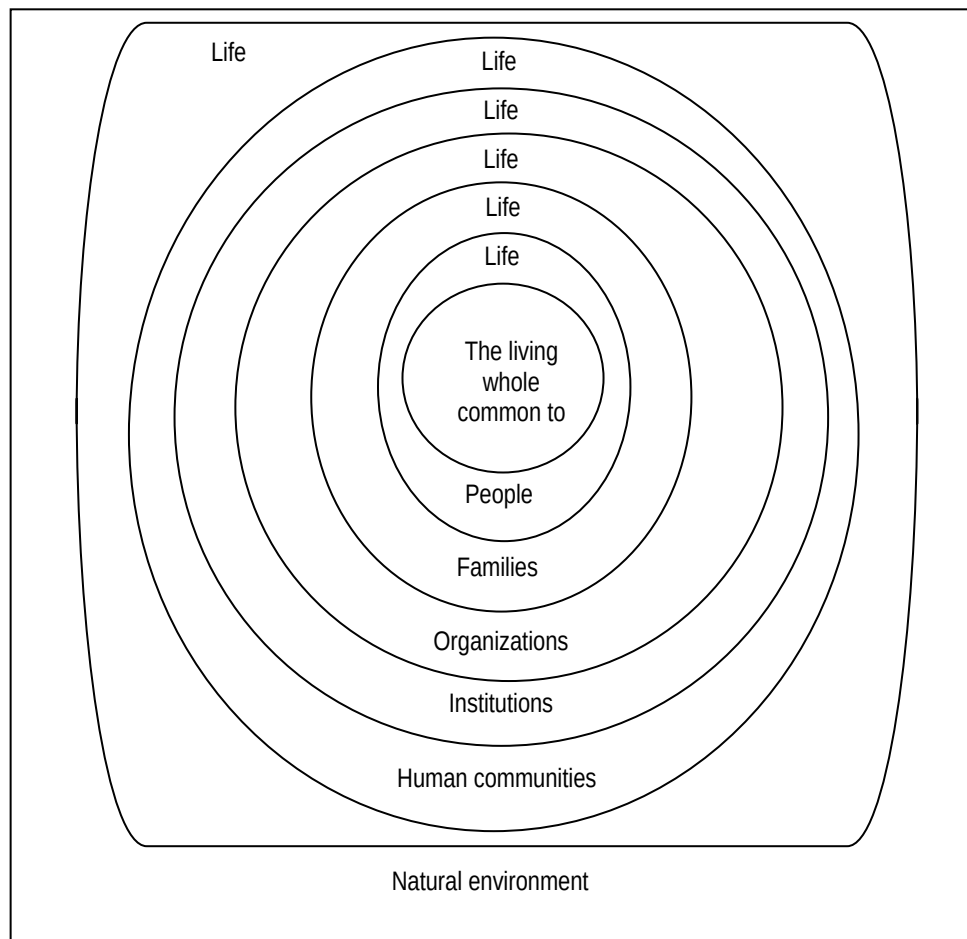


Figure 1. *The organic structure of the natural living and of the man-made one*

The development and use of a “systemic biology”⁽⁴⁾, says Fritjof Capra (2004, p. 333), each organic part of the common living is an integrated whole and thus a living system, whether we refer to individual systems or social systems, to the ecosystems with which we coexist and succeed.

Economy as a living organism is a system “made up of human beings and social organizations in continuous interaction with each other and the surrounding ecosystems on which our lives depend” (Capra, 2004, p. 496).

From the perspective of systemic vision an understanding of the problems facing us in economic life it should take into account that all these problems occur in terms of their causality, as a result of interrelations breach that is formed at the level of the common living whole which also includes economy as organic part.

To envisage economic life outside environment life, the peoples lives, the lives of families and communities, organizations and institutions actually means not to understand that economy is a living system constantly changing and evolving “addicted to changing ecological and social systems in which it is embedded” (Figure 2) (Capra, 2004).

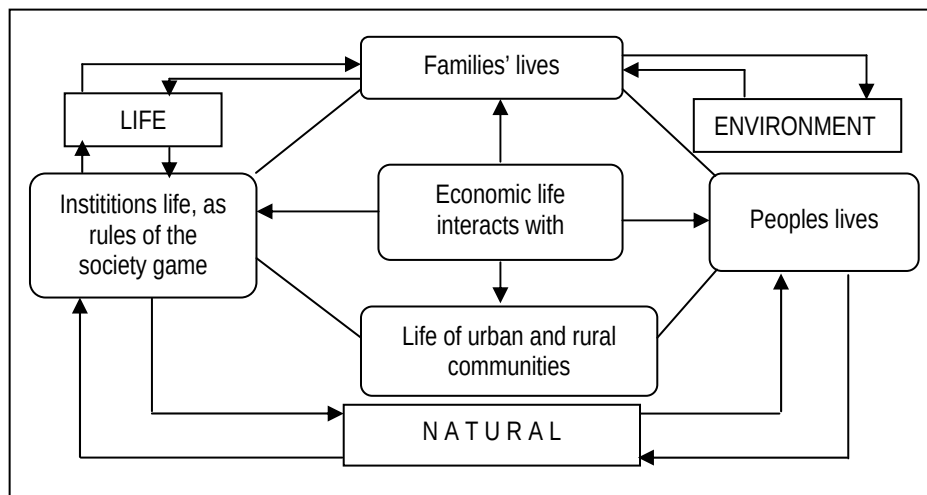


Figure 2. *Organic interactions of economic lives*

2. For a “conscious” optimum

Understanding the economy as a living organism triggers a radical change of the way in which economic growth and development processes are designed, as well as the mechanisms that support them and the institutions that govern them and manage crises⁽⁵⁾.

This change, caused by the essence of “systemic wisdom”, which originated in understanding their “wisdom of nature”, is the very substance of “environmental consciousness” of which Bateson⁽⁶⁾ spoke, the fact that “our natural environment is not only alive but conscious” (Capra, 2004, p. 497).

In view of this vision, at the level of the common living whole of which economy is part, the general trend of sense evolution is in the non-linear nature of the functional interdependence dynamics that lead to relations of harmonious integration of all components, each having an optimal dimension in the time and space of coexistence and common sequence. Optimal organizations – as companies producing goods and services must be interpreted and analyzed from the perspective of a system of criteria that integrate human life, environment and family life, community life and the life of institutions⁽⁷⁾.

Consideration of a single criterion – maximizing the financial return – which is exclusively linked to the organization’s goals to get more net added value, conflicts with other components forming the entire optimal living. By integrating criteria related to all components of the common living whole in assessing organization optimum creates the possibility that its dynamic will change the dynamics of other living systems compatible with it (Figure 3).

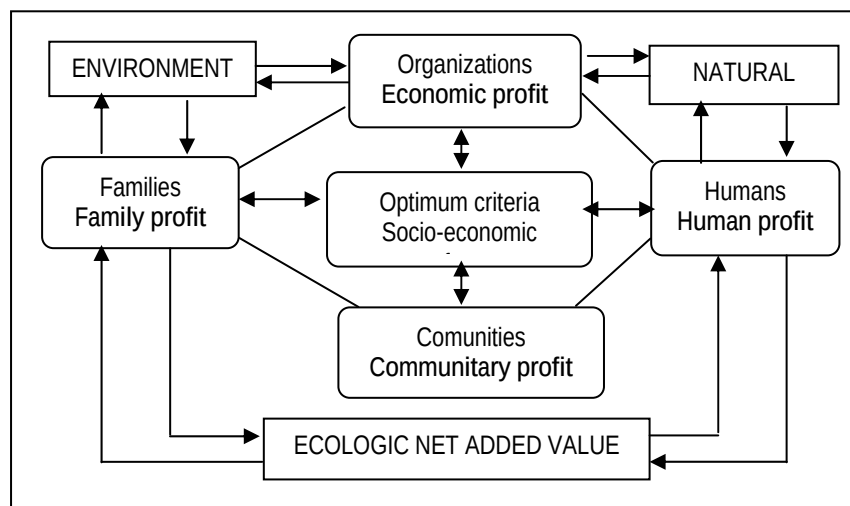


Figure 3. *Multi-criteria bases of the socio-economic optimum*

3. A healthy economic growth

Like any living system, the economy records cyclical fluctuations in its evolution, every 50-60 years, growing phases and decline phases, when the variables of economic life increase and decrease, providing a state of dynamic equilibrium, much needed in the classification of flexibility requirements for the common living whole. A healthy economy can be judged only in social and environmental context in which it is integrated, for which its variables must evolve within the minimum and maximum limits of the system it is part of.

Increasing and decreasing the economy are natural processes that accompany the evolution of economic life in time and space, each expressing the behaviour of sense or countersense, their movement between possible maximum and allowable minimum limits of economic variables are in fact the expression of flexible functioning of the economic organism as part of the social organism, which in turn fits into the ecology of the entire living organism⁽⁸⁾.

Interpretation of the economy as a living organism – part of the social organism and of the ecological one – raises the question of a different way of measuring costs and outcomes. Integrating the economic, social and environmental costs is in fact the correct expression of full efforts that are made in the common living whole to produce goods and services. Such a process of internalizing negative externalities in the businesses they produce them in time and space helps us understand the true costs of production goods and services and thus get closer and closer to the real value of national product, of those final goods and services that fulfil human life. If, for example, out of the gross national product one decreases social and environmental costs, then one has the true value of this index, as a human aggregate indicator obtained in respect to human health and the environment, and the health of institutions⁽⁹⁾.

The fact that gross national product increases when weapons of life destruction are produced, when the natural environment is polluted through direct economic processes, as well as consumption, such growth not only wastes scarce resources, but also impoverishes much of the population lacking one of those goods and useful services that had been produced by the resources wasted.

The concept of economic efficiency, as interpreted today in economics, with forms that appear in the productivity, profitability and costs are in contradiction with the new vision of the economy as part of the common living whole. Today, the economic organism has reached such a level in its

development that it may collapse at any time under the weight of its own weight and complexity. Weight and complex nature of the economic system causes problems when the system becomes rigid, inflexible and isolated from its environment (Jantsch, 1980, p. 255).

Any living system, including the economic one, able to self-organize, in favour of flexibility and open development, with an increasing potential of change, may boost technological and institutional effectiveness, to integrate harmoniously into the living whole⁽¹⁰⁾.

Making a dynamic flexibility of the economic organism and restoring balance in the sense evolution also imply a move to promote social and economic variables – GDP, labour productivity, cost, size organizations, cities, etc. – that their management can be supported in terms of health of the common living whole. Any maximization of economic growth indicators for extended periods of time can overwhelm the capacity to adapt to social and environmental stress, to produce countersense imbalances, generating decreased flexibility and loss of the potential for change, to overcome the critical mass. In this respect, a healthy economic growth based on maintaining potential for recovery of balance and flexibility of economic organism means the appearance of crises in its evolution, the instability of meaning, when they are removed from the living economic organism, those counter elements affecting compatibility with the requirements expressed by the people, environment, communities and institutions⁽¹¹⁾ (Figure 4).

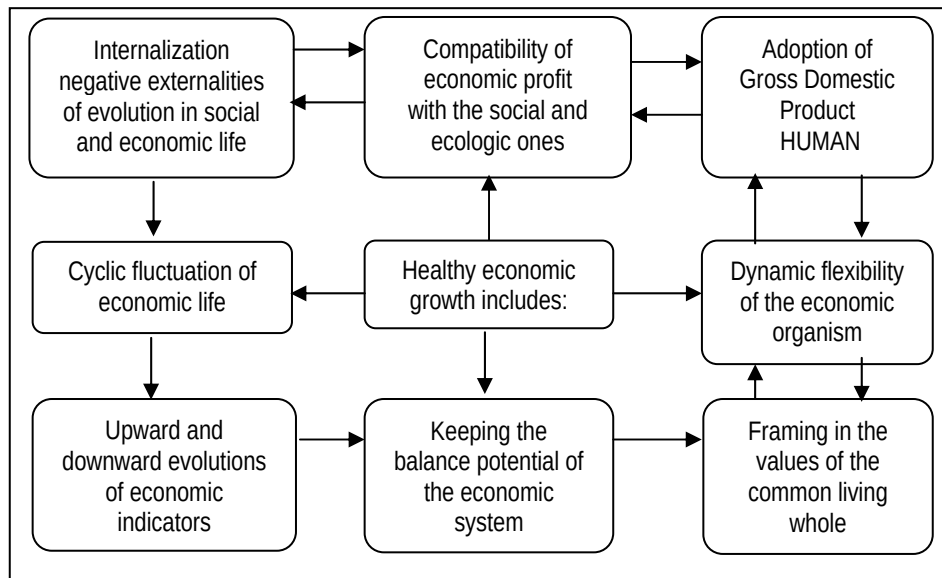


Figure 4. *Interrelations of healthy economic growth*

An unhealthy growth is based on the obsession of continuous expansion, on the excessive increase of enterprises, on the emergence of inhuman cities, cosmic technology, bureaucratic institutions that want to control everything.

A healthy economic growth requires a continuous harmony between individuals and their natural and social environment, among the components of the common living whole. Based on this value these components move and coexist.

4. Rationality and hope at the foundation of healthy economy

As long as the economy means people's lives, with their dreams and memories⁽¹²⁾, located in sense interaction with other forms of living, a healthy economy is based on a value system that forms freedom but also responsibility, human solidarity and social communion, self-organization and self-fulfilment, all within the human dimensions and in pace with the fulfilment demands of human life in society (Figure 5).

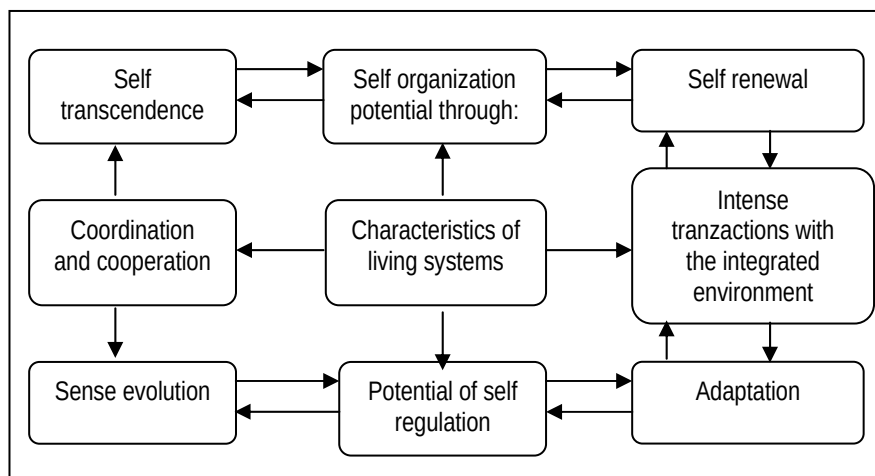


Figure 5. *Systemic biology vision on the living organisms*

Mammoth organizations, inhuman sized cities, everything is too much, they are excessive in relation to human requirements for fulfilment of life in community, they will contribute to the threat of life, the alienation of people, to refrain them from the much needed individuality, altering recreation, contemplation, peace of mind, love and self-fulfilment, the defining aspects of our existence forever (Weisskopf, 1971, p. 24).

Evolution highlights the fact that economic life without human values generated the overconsumption uncontrolled by morale for millions of people, but also under consumption threatening the survival of billions of people⁽¹³⁾, excessive growth of cities – considered one of the biggest threats to social and environmental balance, cosmos-technical energy, on behalf of some states that may destroy the living over and over again, the emergence of giant enterprises – where the man no longer, of political-military powers distributing resources, production, welfare, poverty and obedience!

A new economy as living organism implies that people invest heavily in human resources, to develop human wisdom so that it requires “a new orientation of science and technology to the organic, the gentle, the nonviolent, the elegant and the beautiful” (Schumacher, 1975, p. 34).

The new paradigm on which the new economy will be built involves a process of profound transformation in the culture of our entire society, which some experts named human and institutional respiritualisation⁽¹⁴⁾.

These days, the current global crisis is seen by proponents of the new paradigm as “a complex crisis, multidimensional, whose faces touch every aspect of our lives – health and livelihood, environmental quality and social relations, economic, technological and political crisis... the intellectual dimension, moral and spiritual crisis of a magnitude unprecedented in human history” (Capra, 2004, p. 3), human respiritualisation as sustainable foundation of institutional respiritualisation is a redefinition of human nature from the perspective of the understanding that revolution of means must be constantly subjected to revolution of expectations (Szent-Györgyi, 1981, p. 195), only in their harmony results the health of the common living whole made up of people, environment, communities, organizations, families and institutions.

Notes

- (1) See Constantin Popescu, "Raționalitate și speranță. Paradigma întregului viu", Editura Renaissance, 2006, București, pp. 33-42.
- (2) See Ervin Laszlo, "Introduction to Systems Philosophy", New York: Harper Torch-books, 1972
- (3) Bootstrap approach is designed to Geoffrey Chew (1968) as representing a deep philosophical understanding of nature, under which "The universe is an infinite feature of related mutual events" (see Stanislav Grof, "Beyond Reason. Birth, Death and Transcendence in Psychotherapy", Curtea Veche Publishing House, Bucharest, 2009, p. 77).
- (4) According to Capra,... a fuller understanding of life will be achieved only by developing a 'systemic biology, a biology that considers an organism as a living system and not as a machine'. (Fritjof Capra, "The Moment of Truth", Technical Publishing House, Bucharest, 2004, p. 333).
- (5) See also Michael Regester and Judy Larkin, "Managementul crizelor și al situațiilor de risc", Editura Comunicare, 1981, București, 2003.
- (6) See Batesan Gregory, "Steps to Ecology of Mind", New York: Ballantine, 1976.
- (7) After Nobel Laureate in Medicine, Albert Szent-Gyorgyi, "institutions get old just as people do", *A Plea for Life*, Editura Politică, 1981, București, p. 210.
- (8) Hazel Henderson believes that the well-known cycle of growth and decline, involving the continuous process of decomposition and formation of structures, with recycling of all components, as follows: 'Just as last year's rotting leaves provide humus for plants that appear the following spring, some institutions should decline so that components of capital, land and human talent can be used to create new bodies 'in "Creating Alternative Futures", 1978, New York: Putman, p.226.
- (9) Japanese economists have turned to rethink gross national product in terms of another indicator out of which the social costs are cut. See H. Hendersen, cited work, p. 52.
- (10) In this spirit, Fritjof Capra believes that "all increases must be reasonable and maintain a dynamic balance between growth and decline, so that the system as a whole to remain flexible and open to change" (in cited work, p. 506).
- (11) Therefore, a healthy economy, like any living system, says Fritjof Capra "will be healthy if there is a dynamic equilibrium, characterized by continuous fluctuations of its variables" (cited work p. 499).
- (12) Ilya Prigogine, Nobel laureate in chemistry, believes that 'people have memories and hopes, t value systems which determine their behaviours. ... Obviously, a certain ethical responsibility is linked to a world of uncertainty. This enables us to better understand the value of uncertainty and to place our actions and decisions in the real world and not in an ideal, deterministic one, too removed from the universe in which we live ' in the preface to "Limits of Certainty", author Orio Giarin and Walter R Stahel, Edimpress – Camrose Publishing House , Bucharest, 1996, p. 42.
- (13) See Pope John Paul II, "Enciclice", Editura ARC, București.
- (14) See Constantin Popescu, Alexandru Tasnadi, "Respiritualizarea. Învăță să fii OM", Editura ASE, 2009, București.

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The Role of Internal Audit in Optimization of Corporate Governance at the Groups of Companies

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Abstract. *Recent financial scandals have demonstrated that the risk of accounting fraud may be vague in any type of economic system. In this context, transparency of information, indispensable element for competitiveness in the market is an efficient operation of systems of corporate governance and especially of control systems. All these must be appropriate in the legislation in terms of external information. The issue of governance will thus be seen as a fundamental pillar against pressures which induce at the fraud as a result of lack of transparency of information flows. In all models of corporate governance, external regulations cover a primary role in ensuring the effectiveness of controls, but remain central the responsibility of entities to adopt a virtuous mechanism as an internal control profile. An example in this sense of "best practice" may be represented by the multinational companies that have known to harmonize the national rules with the typical instruments of other models of governance. The authors have established that the main objective in this work is the evaluation model of governance already existing in a group of companies in accordance with the principles of corporate governance. In the first part of the work it was made a comparative analysis between the models of corporate governance, focusing on the role of transparency of communication, the primary tool in prevention of frauds, the link between information and prevention of frauds being independent of the model of corporate governance adopted, by the structure of organization and the control mechanisms. The work*

continued throughout the first part, with the role of internal audit in preventing the accounting fraud, given that any type of government, regardless of how it is configured and the reference market in which we find, to be considered efficiently must provide an appropriate control mechanisms, able to intervene in critical situations and to protect the interests of all categories of users. The role of internal audit of the company, considering the influences of the control of management, assumes a first importance in the corporate governance sphere. This was also the reason why the authors have proposed in the second part of the paper to build a model of optimal risk management in listed and unlisted companies, and based on a model of optimal corporate governance at the level at groups of enterprises, focusing on the fundamental role of the audit.

Keywords: models of corporate governance; governing system; internal control; audit; risk management.

JEL Code: M42.

REL Code: 14G.

1. The models of corporate governance. A comparative analysis

The role of corporate governance systems

According to a famous definition “Corporate governance is the system of rules and norms are likely to be institutional market in the area arising or pursuing different categories of stakeholders, shareholders, management, public administration, personnel dependent, consumers, etc.”.

This definition is supplemented by expressly stated goal of “Principles of Corporate Governance”, the OCSE (1999), the “strategic insurance management company, effective management of part of the trust and loyalty of members. Public, staff-dependent, consumers, etc.”.

Results very clear the close link between corporate governance and operation of competition in the market. Transparency and protection of minorities aim not only a fair distribution of risks in the sphere of business entity, but a properly functioning of the market in the broader sense: it should provide strong mechanisms, depending on the governing bodies to act in favor shareholders, thereby maximizing the economic value of the company. In this context it may be interpreted the strong relationship between the structures – governance mechanisms and prevention – management of the accounting fraud.

The systems of governance have in fact two main objectives: to provide integrity management and guidance to maximize the created value for shareholders.

A transparent and timely communication is the first instrument that can be prevented accounting frauds. The link between information and frauds prevention is independent of the mode of corporate governance adopted by the organization structure and the control mechanism.

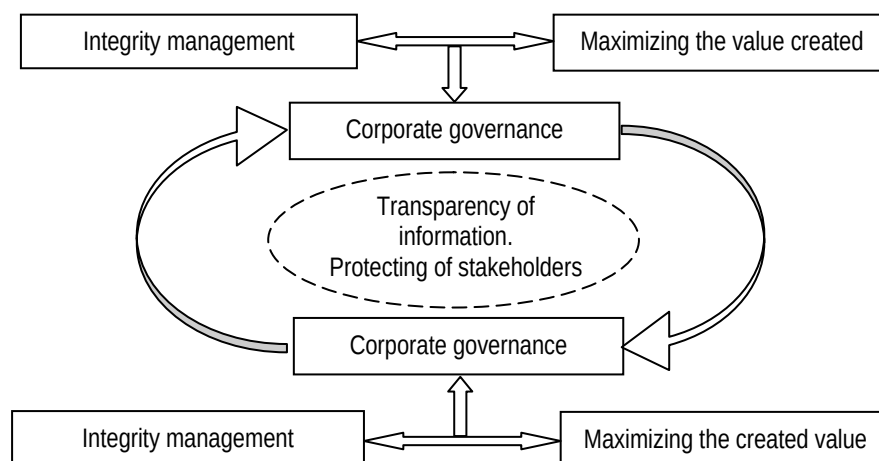


Figure 1. The aim of corporate governance

The governing system of every member state presents the characteristics of the historical, economical and legal context, therefore an immune model to such fraud practices does not exist any more. In such a case, it is interesting to highlight how the common origin of corporate governance rules depends more than relevantly on the characteristics of the system of the analysis countries.

In countries where the corporate governance is at its pioneer stage, such as Great Britain and USA, the private regulations follow the public ones.

The intermediaries that manage the stocks are interested in a good functioning of the market and therefore in the trust offered by this, which is guaranteed by the stringent conditions of market admittance and negotiation, especially in transparency terms. Therefore, though it is not necessary, the market rules come as being perceived at a legislation and public regulation level, assuming the role of “mandatory regulation”.

In the Continental Europe countries, especially in Italy and France, the regulation of the markets and the society leaders is more public; this difference also has a substantial signification – the “origin” public intervention in being inserted in a less receptive context and exposed to numerous unfriendly environment terms.

It is obvious, therefore, that the economical and social reality, existent in different countries, gave birth to a series of structures of control distribution and management, that are not alike, each one being specific to the reference market with absolute particular characteristics and non totally reproducible. Overall, we can highlight the fact that in Europe, and mostly in Italy, Germany and France, the property and the control of the listed companies must be strongly concentrated, and the rate of property attributed to the market must be relatively reduced, understood as an assembly of minor shareholders. In the Great Britain and the USA, the property is diffuse (almost 90% on market), and the cases of rightful control or rightful fact are few.

There can be observed how in the non-Anglo-Saxon world there is proving a widely concentration of the control of the listed companies: that is, when a subject controls the majority of the votes, in fact whenever the shareholders are absent, a rate minor than 50% is actually enough to ensure the majority required. It is often observed a fall of the property right owning, either by emitting a particular category of shares, either by property pyramids or crossed participations, designed to guarantee the right control, without any related effort over the property. In the Great Britain and the USA, the situation is different, the fragmentation of the whole property not consenting here to any act of exerting a control over the company, that will be trusted to one or more managers, independently to the fact that they are shareholders or not. Regarding the efficient and functional structure of corporate governance, which to ensure

integrity and rights to be respected all categories of stake holders, the problems that can be manifested are referred to the possible Agency costs, regarding the separation of control property.

Independent of the reasons that lead to frauds, in the typical European model, but also in the Anglo-Saxon, the major control shareholder but also the controlling manager, non-owner, can attribute diverse types of privileges, economical or not, absolutely not justified, towards the interests of the company and the minor shareholders. In the situation of a diffused property, no shareholder is in a position to control the activity of the economical resources' manager.

The minor shareholders have no way of expressing over the usage of internal resources or loans, with the alternative of a larger distribution of the profit or a reduced debt expense that are not capable to exert an efficient monitoring act, either due to the lack of information, either because there is a problem called "collective act", because each minor shareholder benefits, of course, of control initiatives assumed by others but himself does not dispose of sufficient means and stimulants to assume them.

The problems that we have mentioned earlier are being taken care of, one at a time, when a control shareholder, more or less relevant, being the holder of property rights (security benefits), embraces the costs and benefits of the economical decisions.

This dividing of the control advantages, to all the other shareholders, reduces the monitoring cost that is a component of the agency cost.

In this case, there are other complex costs, for the minor shareholders, exactly for the only artifice of the economical decision, and the major shareholder can take advantage of its own power to go after his own interests, by stealing either from equity or other values belonging to the shareholders. The means of conducting these types of frauds are different, for example: the making of correlated parts transactions or transactions in clear interest conflict with the interests of the market, the sale or the acquisition of fix or financial assets at a non-favorable price, or the exploit in own interest of the advantages offered by the privileged informing regarding the perspectives of the company. Based on this information, it is possible to rationalize different structures of corporate government, the expression of international financial markets.

Tentative classification models of corporate governance

Two main models of corporate governance depend fundamentally on how the design of separation between ownership and control. In the "outsider system", defined and "market oriented", the categories of companies are the so-called "public companies", characterized by an increased separation of the

property, typical of companies listed on regulated financial markets and a low concentration of ownership. The market itself is the main mechanism for regulating the conflicts between shareholders and managers, which are monitored by the market, due to continuous changes of ownership through shares negotiation. Such a model of corporate governance, characterized the Anglo-Saxon and American, in which the “common law” system, the protection of minority shareholders and creditors, is very high and the ownership society is prevalent diffuse.

In the “insider system”, defined as the model “rin”, the ownership is highly concentrated in a tough base with a strong role in decision-making, consisting of one or few groups with a familiarly or bank character. The pivot of the system is represented by the relationship between the State, industry, and the banking system, the financial market not being developed in a specific effective efficiency, because of the strong presence of the banks in the capital of the company, of the influence of them in decision making and management decision-making guidance for achieving and respecting the interests of owners.

Such a model of corporate governance characterizes European countries, especially Germany, Switzerland, Austria, France and Italy (with some peculiarities) in which ownership and control of listed companies are heavily concentrated, the share of ownership is attributed to the relatively low (understood as a group of minority shareholders).

An important consideration to be highlighted, based on the classification just given, is about the valence which, in the two models, the information assumes. It was also stated about the role of communication in coverage of corporate governance and economic management, but it is necessary to add that according to the examined model one can see how this is a crucial variable in the functioning of the market.

In the model “Outsider system” a model of governance in which the market cover, because the logic of “take over” the role of “arbiter” of economic performance, external information assumes a fundamental role in the proper functioning of the same markets. In the absence of transparent and accurate information and without the availability and reperibility for all stakeholders, the stock exchange loses its control and the self-corrective organisme typical for this structures of corporate governance. In accordance with the experience of continental Europe, most often, the information loses the role of impartial instrument of communication, because they tend to privilege the interests of a reduced part of the stakeholders, the control shareholders and for the operators it is not possible to easily access inherent information of the management and economic performance.

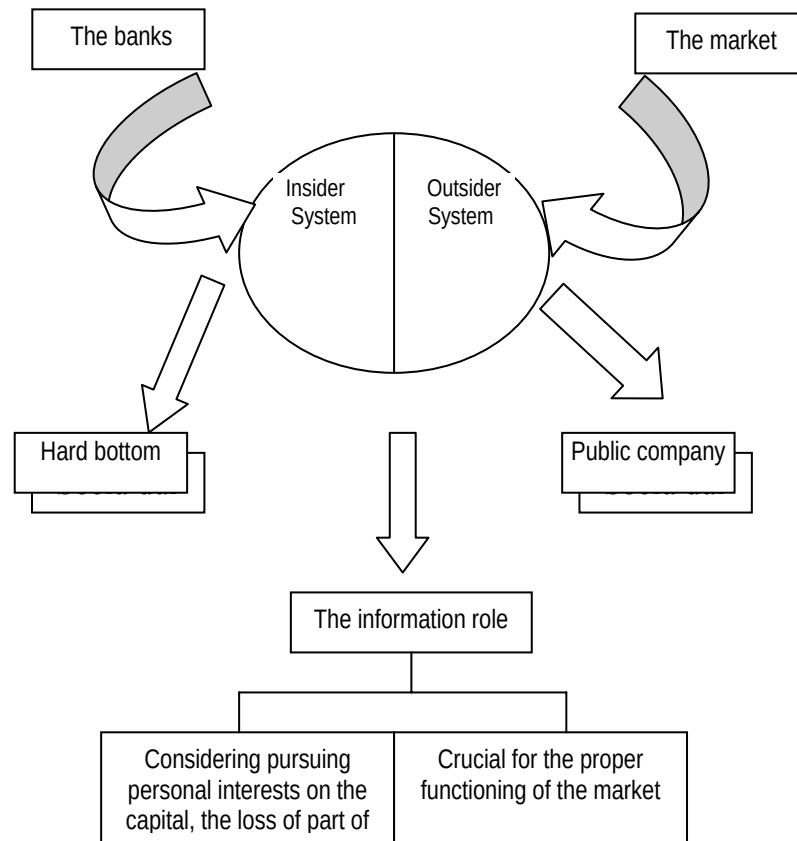


Figure 2. *The two models of corporate governance*

Systematizing, we can assert that it is possible a reassumption of the typical features of the two models as follows:

- a) The “insider system” model, is characterized by the following:
 - property (equity) concentrated in banks or families often represents the reference shareholders;
 - the control normally exercised by the major shareholders;
 - the capital markets relatively illiquid;
 - the existence of implicit contracts and relationships of trust very tight, based on personal relationships between owners, managers, suppliers;
 - absence of a real market for control;
 - the central role covered by banks in the system of corporate governance.
- b) The “Outsider system” model or Anglo-Saxon system is characterized

by:

- Diffuse ownership (equity);
- Very liquid capital market;
- The market for the control very diffused, on the continuous improvement of “take over” for companies “underperforming”;
- Major attention and defence of the interests of major shareholders, in particular of the minority;

A table classification of the two models of governance would be shown in the following:

Table 1

The characteristics of the two models of corporate governance

The characteristics	Market-based system	Credit-based system
Ratio credits/risk capital	Low	Higher
Concentration of the capital	Medium-low	Medium- higher
Crossed capital	Little diffused	Very diffused
Separation owner-control	Very stressed	Least marked
The monitoring model	Externally (external threat)	Internal
Market model of shareholders	Outsider	Insider
The number of listed companies	Higher	Low
The presence of groups	Medium-low	Medium- higher

Another possible classification would be one that is based on relationships that can be set between different management organs; in particular two types of structures of the society board can be distinguished:

a) the type “one-tier system” which provides a single governing body, responsible for driving the company’s management and monitoring; the relevant body is the “board of directors” which refers to the specific directives of the executive directors, expression of management, or non-executive, or “outside directors”, expression shareholders. These systems are especially characteristic of the industrial areas of the USA, UK, but also in Southern European countries (Spain and Portugal) with certain features.

b) the type of “two-tier system”, where decision-making power, management, and control are entrusted to two separate entities, with different responsibilities (supervisory board is not executive, appoints, controls, and dismisses management board which, in contrast, has the responsibility of the executive role). These systems are typical of industrial areas in Germany, Switzerland, Austria. But there are also hybrid models (eg in France and in Italy) where some elements of both structures can be found.

2. The role of internal audit in preventing fraud

Any type of corporate governance, no matter the way in which it is configured and the referring market in which it would be efficient, must specify optimist control mechanisms, which should intervene in critical situations and protect the interests of all user categories.

A study of Enst & Young, 8th edition, shows a preoccupying growth in accounting fraud tendency despite the predictions and adequate normative in the matter, the predictive regulations, and the fact that most of the companies are endowed nowadays with specific behaviour codes that have provoked the recent financial scandals.

This study has been made in 30 countries, involving companies that operate in diverse activity sectors, starting from multi-national to SMEs.

The factors that stand at the base of the company accounting fraud risks were so classified:

- the growth of the organizations' complexity;
- reduced diffusing of the internal audit functions;
- the acceptance of the companies of a certain risk level as a typical business item;
- the presence of a intern control system that does not fully correspond the companies' economical exigencies;
- more and more aggressive company policies.

There it is that the most efficient, individualized instruments are actually only two: management control and intern audit functioning.

But it is still up for the management to install the system and the processes that could serve as preventing and discovering the frauds inside an organization to evolve an economical culture oriented to ethic behaviours that could climb all the levels of the structure, in exchange remaining for the intern audit to supply own assistance, evaluating the risks and the control strategies of the organization, suggesting initiatives, solutions, proposals and recommendations of mitigating fraud danger and improving the control strategies. The intern audit's role, given its influences over the management control, assumes a front importance within the corporate governance.

The economical crisis that took place on the European scene, not only in the last years, have shown the fact that the accounting frauds are attributed also to the gaps (or even the absence) of the formal control provided in the extern normative and the intern regulations of the companies.

Highlighting the tight links between fraud, corporate governance and internal audit role is again revealed.

These items are relevant only because the regulation stays inefficient if not accompanied by an organizational culture based on ethic principles, to put in the spotlight, between its priorities, the transparency of the accounting information and the intern and extern control efficiency.

Eliminating the interest conflicts of the control mechanisms is, in our opinion, the main way to ease the concrete functioning of the control systems. Along with the normative interventions, a special attention must be given to the intern regulation initiatives from these industrial and financial organizations that come along with a central importance to the choosing investment, giving the market to select the most meriting entities, that is in a protective way and guaranteeing way of the correctitude and transparency offered to the investors.

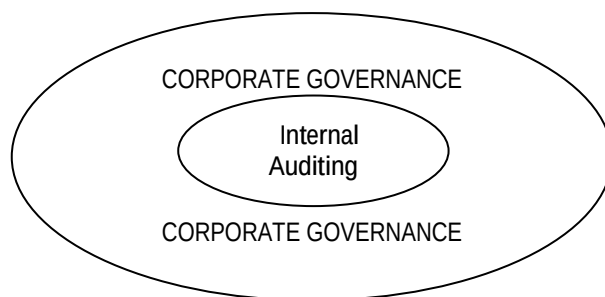


Figure 3. *The internal control systems*

Sursa: Patrizio Teltom (S. Corbella, N. Pecchiari, „*Internal auditing. Aspetti di struttura e di pricessi: i rezultati di uno ricesco empirico*”, Egea, Milano 1998)

The previously mentioned study made by Ernst and Young highlights the fact that 20% of the companies have trusted the extern consultancies specialized in tracking the frauds, with a satisfaction degree of 88%. In most of the cases, especially the Italian companies declare to possess specific organizational policies, capable of preventing fraud risk and permitting its identification. However, only a part of the interviewed ones have recently ordered a specific study of risk vulnerabilities for their organizations.

The fraud problem seems to be perceived more and more: in 2003 it is shown that 53% of the companies questioned at a international level had an Auto disciplinary Code, and 68% had already adopter the Ethic Code; we are talking of 33% of the Ernst and Young's researches mare in the year 2000. Only 45% of the same companies consider that the fraud-preventing adopted policies are fully understood by the staff.

As a reference, the Italian context has been considered as being opportunistic on more levels, and useful to recover the existing instruments, especially for the Auto-discipline Code of the listed companies, reviewed in

July 2002, of the intermediates initiatives facing the clients' information, for a better understanding of the investment risks.

The development of the governance principle in Europe and all over the world highlights the tight bond that exists between the intern control, the governance and the going concern.

It has also been highlighted that the main factors that have contributed to a consequence worsening of the recent bankruptcies could have been composed of the intern control lacking, that is the most opportunistic and penetrating instrument of the control system.

The Coso Report defines the intern control as "a process being acted" by the Board of Directors, management and rational guarantee supplying personnel in reaching these objectives:

- Pursue and achieve strategic objectives planned;
- Efficiency and effectiveness of operations;
- Credibility of financial statements.

The hypothesis, which comes from such a classification, is that the existence of such a valid intern control system can help the management in following and reaching the proposed objectives, insuring in the same time the protection of all shareholders' and stakeholders' interests overall.

According to the COSO Report, all organizations are exposed to risks that come either from intern or extern sources. This exposal can influence their capacity of continuing and existing as competition, of maintaining their financial strength and conserving the quality of the products, services and personnel.

COSO Report individualizes as fundamental components of internal control:

- Sphere control;
- Risk assessment;
- The control;
- Information and communication;
- Monitoring.

This model points out how the sphere of control, hence the reference context in which this control is located and operates, is the basis of any monitoring activities. This should be used systematically, until inefficiency or even unnecessary, the systems and mechanisms of communication that bring continuous complete and timely information flows within the organization.

Starting from the external environment, communication report facilitates, therefore, the control activity, and especially risk assessment, enabling continuous monitoring of the economic activity. As we also stated in the sphere of prevention and control of fraud, internal audit role is primarily and ensure

that management has reviewed its exposure to risk and insert appropriate fraud among the potential risks, giving adequately management processes such risks. The central role of this function is to provide an independent assessment on the effectiveness and adequacy of internal control solutions introduced by management in particular on the degree of actual operation.

The intern audit should add value to all the organization's activity, easing the identification and evaluation of the existing risks on all levels. These should be obtained by examining the essence of the risk management economical process, and operating as if there were even for this management policies and clear and coherent behavior normatives.

The intern auditors, among other, should have full definite responsibilities in preventing, identifying and signaling the frauds and should practice such actions that could create "conscience".

In this case appear the anti-fraud policies as useful, or the specific firming activities of the dependences that must be undertaken in order to grow the perceiving of the fraud activities and the necessity of their prevention, identifying and signaling. The auditors and the organizations, in this way, should let themselves helped by the depending personnel, clients, shareholders and other users involved in the fight against frauds on all levels and on all fronts.

In the last year, allover Europe, all the changes imposed by the base requests of the extern reports of the economical entities have made a basic characteristic of all the Board's recommendations regarding the corporate governance. For example, the Turnbull Report in 1999 proposes the introduction in the UK of an Annual Report regarding the functioning of the intern control.

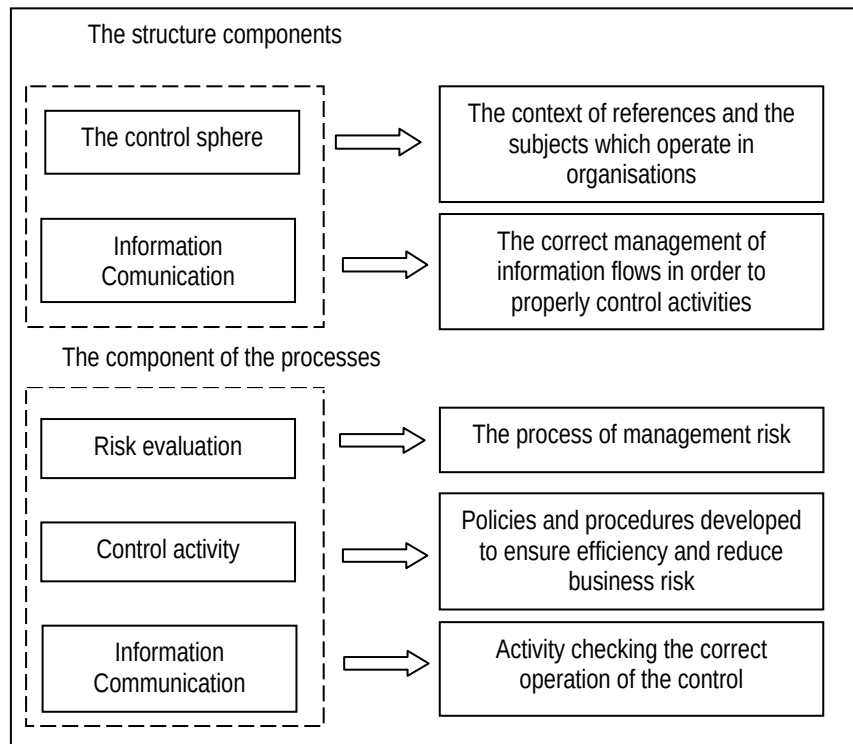


Figure 4. *The sphere of communication of internal control*

This request is aligned with the previous recommendations related to the published report in the UK, starting from Cadbury Code in 1992 and to the Hampel 1998 and UK Combined Code in 1998. The Cadbury Code presents an evolving point of the corporate governance in the European countries, borrowing in fact as in the Code the “best practice”, a series of documents that regroup recommendations meant to improve the organization, management and control of the economical and financial activities, in a wider way and of the monitoring activity especially.

The structure of the code is based on three fundamental principles: the “openness”, “integrity” and “accountability”. It is necessary to highlight that the “Fraud Advisory Panel” of the “Institute of Chartered Accountants of England and Wales” has debated the necessities of amplifying the recommended information by the Turnbull Report, in which it is said that the annual financial statements must have a statement almost like the one for the intern control, referring to other domains, among which of main interest being the systems introduced in the organization for the fraud prevention and identification.

3. Proposal for an operational model of group

The objective of this paper is to evaluate the existing model in a group of enterprises with International Governance principles; rationalization of the mechanisms of functioning and control systems in responsibilities delegation; developing and implementing an integrated system of internal control in accordance with best corporate practice, based on risk management.

Priorities to be taken into consideration in adopting a model of governance are:

- Rationalization governing bodies (Boards and Committees);
- Setting skills and existing responsibilities;
- recognizing the existing internal control.

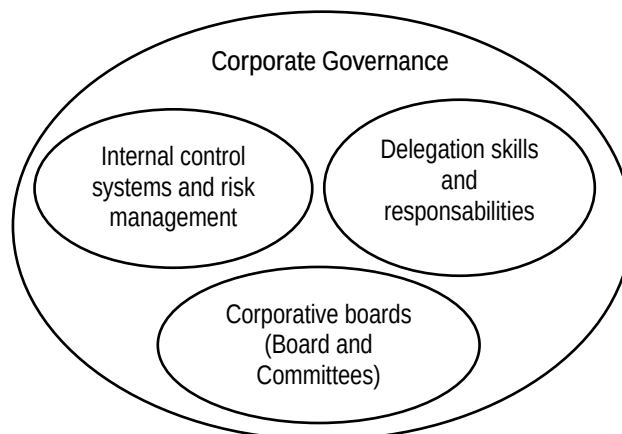


Figure 5. *Priorities of model of governance*

Table 2

The behavior codes and rules existing in the world

Countries	Codes of Behavior and Rules of Reference
Italy	Code self (Italy Scholarship)-Vietti reform/Decree Law 262/2001
Germany	Kon Tray; German Corporate Governance Code
France	The reference Vienot; Nouvelles Regulations Economiques; Loi sur Securite finaciare-2003
USA	COSO-Report; Sarbanes & Oxley Act
UK	Cadbury Code/Combined Code/Higgs Report – The legislative reform of organization
Spain	Riuz Code/Codigo Olivencia- The legislative reform of organization
Belgium	The Law No /08/2002
Mexic	Code of Corporate Governance

Corporate bodies-corporate-structure and functioning in an optimal model of corporate governance:

- Board of Directors – the role in the group companies is in terms of control and management procedure for appointment and choice and the number of members in Board of Directors;

- Existence of rules which disciplines in the group, competencies Board of Directors the formal recognizing of the leadership Council;
- The presence of Audit Committee and the human resources committee.

Activity

- Constitution and establishment of the Audit Committee at the mother company;
- Main subsidiary;
- Creation of the Committee of human resources (which nominate the staff and established career plans);
- To the mother company level.

Table 3

The identification of entities which leaving the supervision and control activity

Size of company	The subject
Small	Department of Internal Audit of the mother company
Big	Department of Regional Internal Audit and the Regional Audit Committee

An approach to risk management in the unlisted companies is different but the objectives remain essentially the same. We will try an example as in the below model.

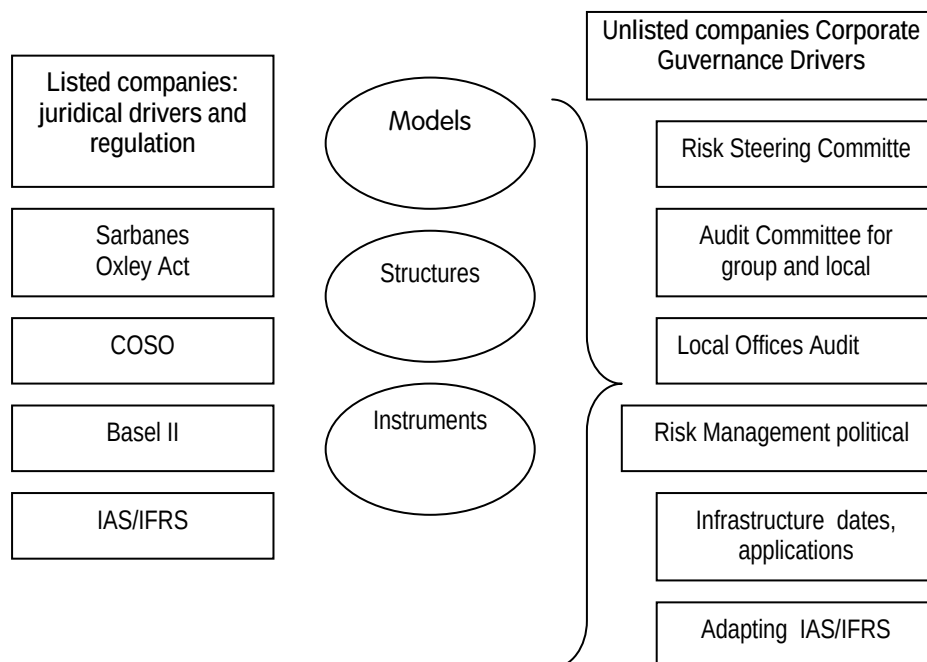


Figure 6. Risk management in listed and unlisted companies

Action plan in managing the risks should identify sources of risk inherent to define the function that manages the risk, with predilection to define and evaluate of residual risk; to specific the activity, objectives and terms to implement the reporting and monitoring the risks, require regular updating which to be presented to the Steering Committee.

The optimal model for management of the risk:

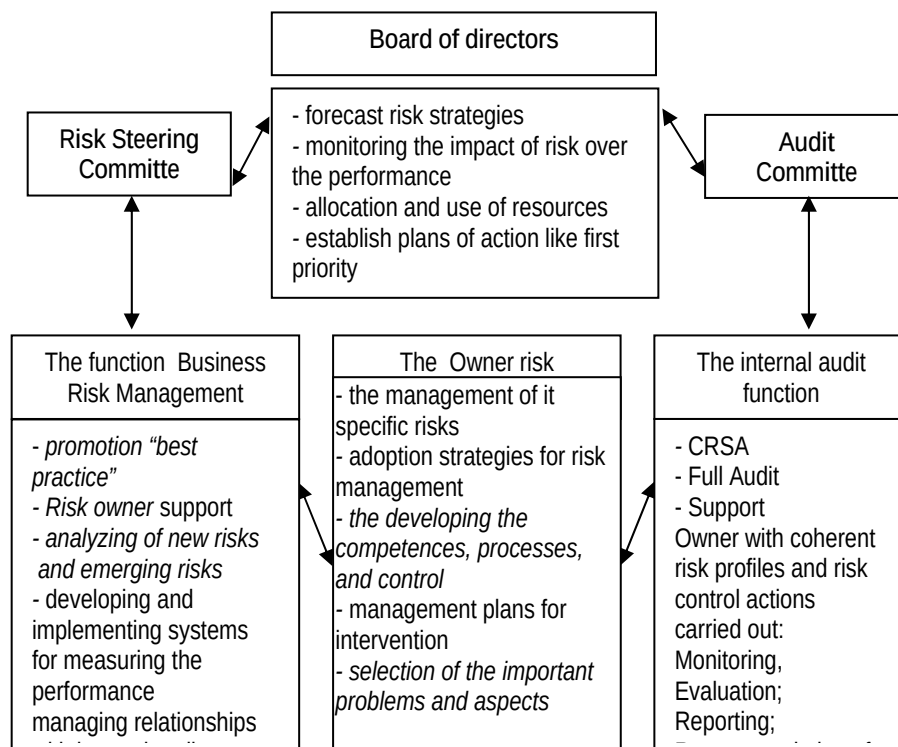


Figure 7. Optimal model of the risk

Delegation of responsibilities according to organizational goals should have as objectives: playing coherence of the organizational profile and strengthen the organizational group processes in the legal sphere that is the existence of a coincidence of a "de facto responsibilities" management with liability laws.

From corporate concordance/organizational at the internal control system the following requirements are imposed:

- an unitary system of internal control officially and approved at group level;

- the formalized procedures;
- the integrated system of identification and management of economic risk;
- Code of ethics/formal behavior and extensive broadcast;
- disciplinary systems/penalty.

Assumptions of a group model

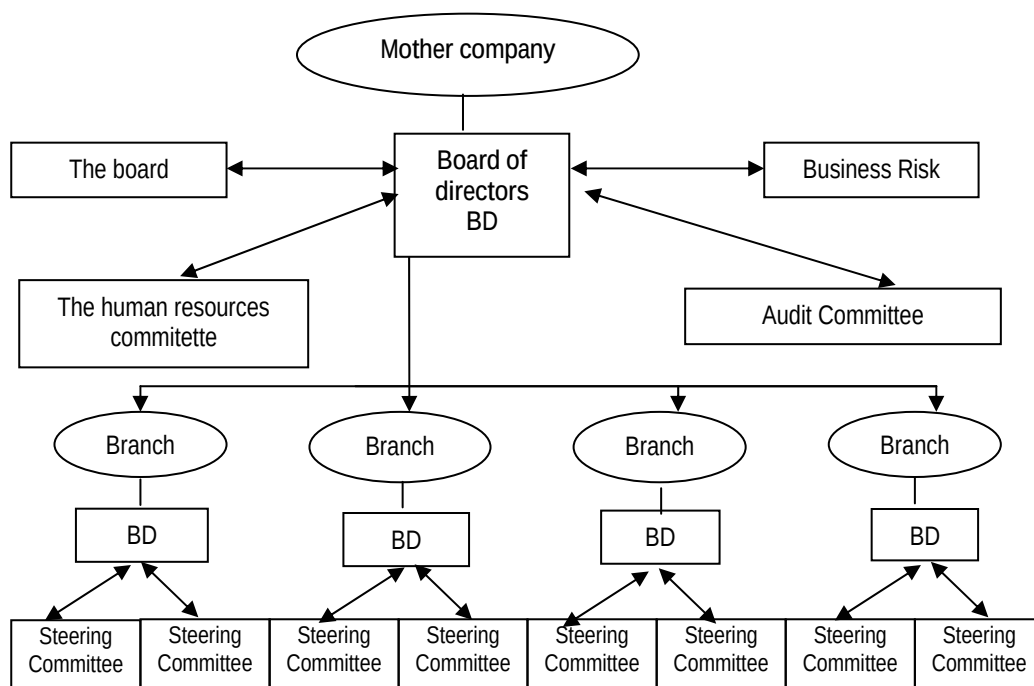


Figure 8. Assumptions of a group model

The rules imposed by internal control systems must impose the following rules: the company specific principles; a single management model; corporate governance guidelines; a guide with standards of internal control.

The systems of internal control functions should include: internal audit, the audit Committee, Business Risk Management. In an optimum design of corporate governance among the essential characteristics of Internal Audit are the independence and the objectivity.

The Audit Committee is a body appointed by Board of directors and composed of at least three members, from which at least one should satisfy the requirements for independence. At least two members of the Committee have a

recent and significant experience in the field of accounting and finance. In reality, the Audit Committees have four or more members of which at least half are independents, among them one identifies the president too.

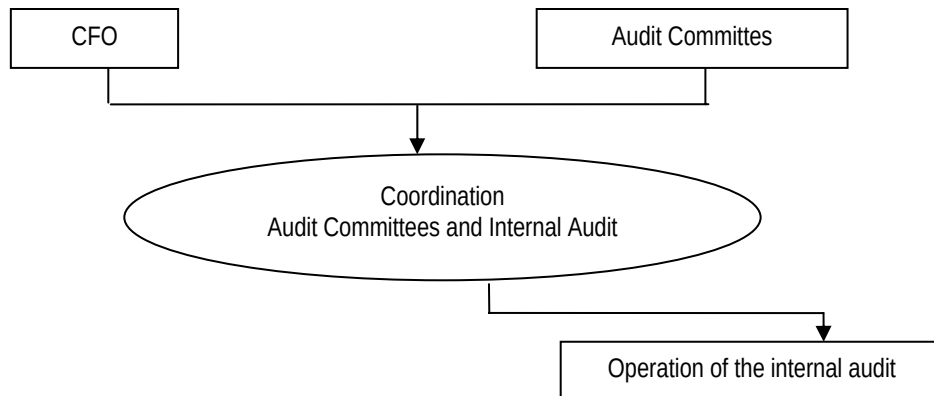


Figure 9. *Audit Committee “network”*

Each committee, through by the web site, has access to the data and economic information of interest and consider the activity of committees in other countries and that changes documents and experience. At least once a year, the members from all Audit Committees participate at a meeting to present their activity and to define the priority objectives of their future activities.

This is in fact a network and a professional community.

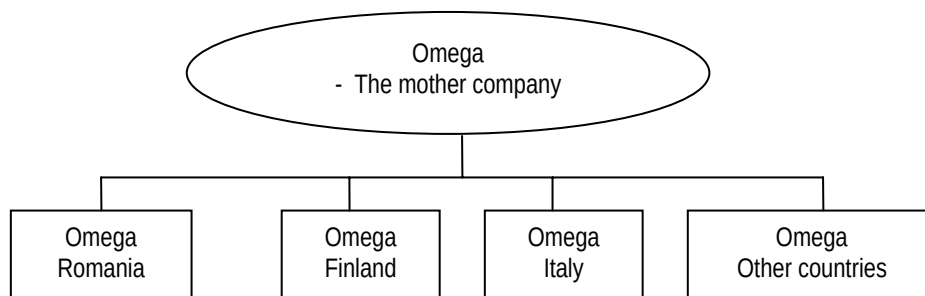


Figure 10. *Business Units Significantly*

The objectives of the new Audit Committee must focus on cooperation with other local Audit Committee, in order to guarantee: the obtaining operational plans of the Regional Audit Committee with guidelines of the Central Auditing Committee; an approach based on “progress through sharing”,

in view of transmission to the local audit Committees of important informations and data referring to the group and the relevant areas (eg a use portal to the Audit Committee, coordination of internal audit plans; support of the relationships between audit committees and external auditors).

A new approach of regional management must aim the improving the corporate governance in the group. Internal audit and the Audit Committee will adopt a new approach to regional coordination, to focus particularly on:

- increasing areas of activity covered by the control and implementation of a certain frequency;
- deep-penetration in the local business to make an approach group of “progress sharing”; maintenance of the efficiency in terms of operational costs; exercise an important role in monitoring ERM, but do not support direct of responsibilities for implementing or maintaining it.

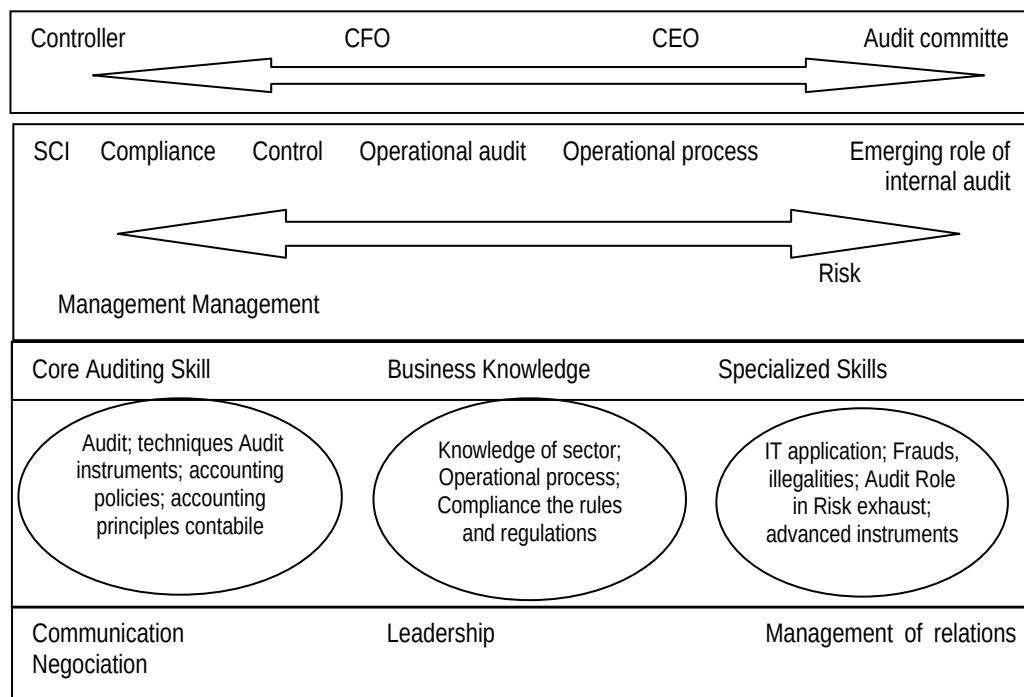


Figure 11. *Emerging role of Internal Audit*

Another important particularly aspect in the instauration of an optimal model of governance is clear evidence of the ratio between risk management and normal management. A short presentation of this differentiation appears in the below model:

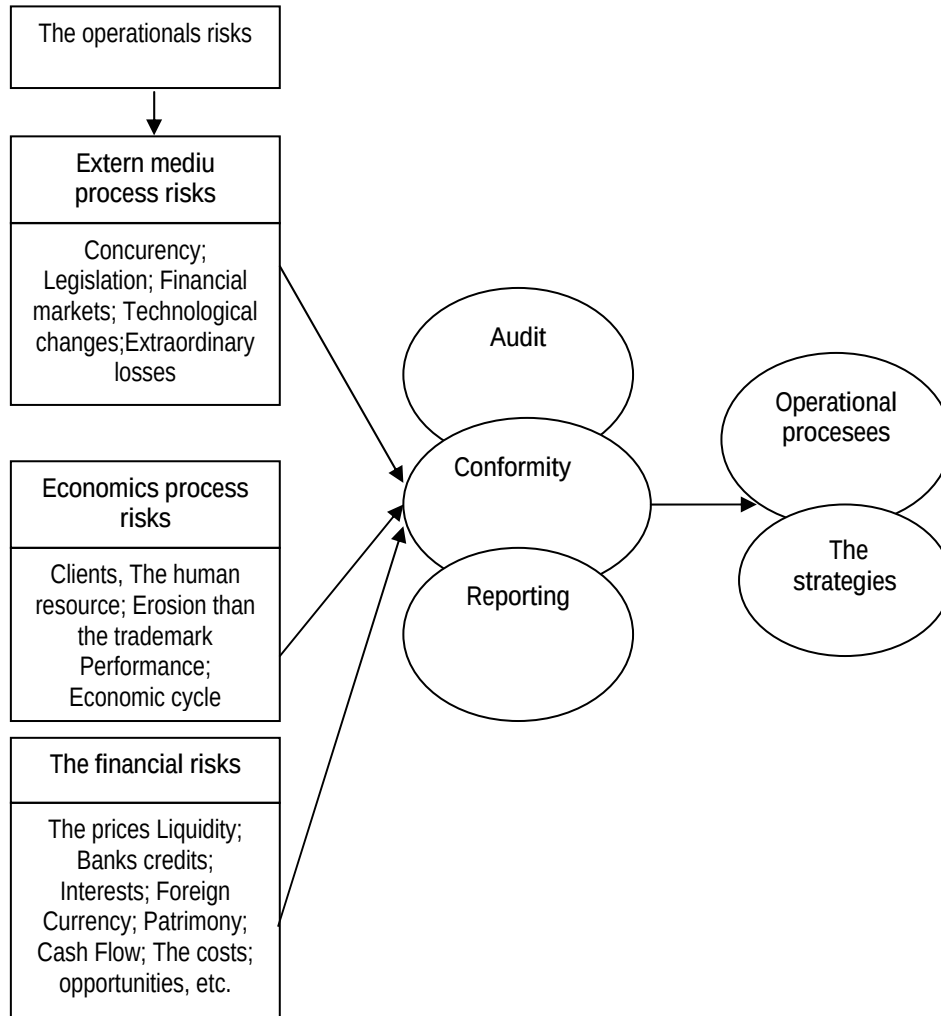


Figure 12. *Particularly aspect in the instauration of an optimal model of governance*

A better “Corporate Governance” requires the group to adopt a methodical approach to risk management for protecting the interests of shareholders and stakeholders (creating and maintaining the value to ensure that Board of directors controls the performance and sustains the policies to generate values, to ensure the existence of operational controls which must be true).

4. Conclusions

The parameters used in the analysis of concrete cases of fraud and accounting irregularities can be considered significant criteria, which can make a distinction or one attempted classification of financial scandals that in recent years have filled the front page of the press or other economic dailies nature.

Tools enabled in order to align the interests for the subjects to which acknowledged the role of business managers' or the shareholders, according to the principle of maximizing the value of shares, revealed their negative aspects, resulting in increased management responsibilities, predisposition to risk, at the temptation to pursue only short-term objectives (delaying the solving of the problem) and of certain accounts.

Pressure only on maximizing the value of shares, reinforced by the aggressive incentives and sanctions, has produced two results deleterious, namely: inattention to the interests of other stakeholders, creditors, staff, trading partners, etc. and slipping ethics with many responsibilities regarding the management, which can be seen in the true values of expropriations against all subjects interested in the company and the market in general.

The general frameworks of reference indicate a distortion of the system of incentives and motivation of management to an entity owned diffuse. A legitimate objective for the development of economic activities is often degenerated, when the internal principles have not worked, and the interests of managers independent, auditors or reviewers were aligned with those of managers.

Other measures:

- Risk-reduction joined to reputation/image entity and prevention its illegal compartmental or failure;
- Compliance with legislation and recommendations in matters of corporate governance;
- Ensuring transparency, efficiency and fiability in internal communication;
- Specifying the responsibility among legal responsables;
- Substantiation of approaches for risk assessment.

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Banking Risk Management in the Light of Basel II

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Abstract. *This study presents a summary of what is the meaning of risk management in light of the Basel II Agreement. The study is structured in three parts, namely: credit risk management, significant credit risk management and credit risk management under Basel II Agreement. Thus, in the first part it refers to how developed the credit risk management over time and which are current phenomena that generate these risks, continuing in the second part with a summary of the reasons for which one wishes management of such credit risks, following the third party to talk about the shippings of Basel II in terms of credit risk management.*

Keywords: credit risk; banks; credit risk management; Basel II Agreement; rating.

JEL Codes: E51, G32.

REL Code: 11C.

1. Introduction

Risk management activity has experienced exponential growth over the past decade. Thus, credit risk management is much broader than simply lending operations. This extends and includes in its sphere of concern substantive issues relating to three phases of the credit process, namely: the decision phase of credit life and credit portfolio management process for credits (Trenca, 2004, p. 207).

Basis of a sound credit risk management is to identify existing and potential risks inherent in lending. Normally, measures to counter such risks include management policies and credit risk parameters to be controlled in credit risk. A set of such policies includes:

- Policies on the concentration and large exposures, adequate diversification, credit parties or monitoring risk exposures;
- Policy on classification of assets, which involve assessment of repayment capacity of the loan portfolio and other credit instruments, including interest incurred and not received that expose the bank to credit risk;
- Loss provisioning policies or establishment of an adequate provisions to absorb the expected losses in the loan portfolio and the level of assets that generates losses (Greuning, Brajovic, 2003, p. 94).

The term risk management has no universally accepted definition. In general, the term used in the risk management of financial institutions represents all policies and procedures that financial institutions have implemented to manage, monitor and control their exposure to risk.

Risk management function within credit institutions will be of particular importance in view of the application by them of the Basel II⁽¹⁾, especially given that credit institutions will want to use their own internal models for calculating capital requirements under the new agreement.

Credit risks from economic phenomena can be individual or a certain economic status circumstantial (Bernard, Colli, 1994, p. 56).

The first and foremost to the insolvency of debtors, their lack of promptness in repayment of loans, the banks holding of inaccurate information on borrowers.

Secondly, the economic situation may be that maintaining a particular state of risk. An example could be given to economic crises, political convulsions, etc..

Risk on line credit, banks must hold, as we noted, relevant information on economic and financial situation of debtors, the economic nature of transactions, the moral reputation of the borrowers, their credit status, etc.

2. The importance of credit risk management

It is certainly clear that a strategy should include both bank performance programs and bank risk management procedures that aim, in fact, minimizing the likelihood of such risks and the potential exposure of the bank. We maintain that it is obvious because the main objective of these policies is to minimize losses or additional expenses incurred by the bank and central goal of banking is to obtain as high a profit for shareholders.

But not always these two objectives – the general and sector – is in line. It may that, in some cases, the cost of implementation and operation of risk management procedures designed to be greater than potential exposure to risk. Which only means that these programs should be selected according to efficiency criteria. In other cases it may be that the bank's strategy to involve greater risk taking or of new risks.

In this case the decision should always be taken in view the additional costs necessary to ensure adequate protection and greater potential losses. But if the decision is such, then minimization bank should under no circumstances become a goal in itself. Moreover, bank management objectives are three: maximizing return, minimizing risk exposure and compliance with banking regulations in force. None of them has an absolute primacy, a bank management's task is to establish objective and that the central management of each period.

The importance of bank risk management, however, is not confined only to minimize costs. Permanent concern to minimize exposure to risk management has positive effects on employee behavior that are more rigorous and conscientious in carrying out the work tasks, it is not negligible either psychological effect to deter fraudulent activities. The existence of adequate programs for prevention and control banking risks contributes to impose banking institution in the community, little or no experience of such conditional admission or participation in programs such bank inter-bank associations or obtain higher qualifications in the banking authority.

And not the least, an effective management of banking risks will imprint on his public image of the bank. Customers want a bank safe and shareholders alike. Soundness of the banks attract depositors but given that deposits are not necessarily assured. If banks are not obliged to provide for civil liability to the depositors, then their interest to choose the most secure institutions is diminished and the main criterion is the profitability of investments. It may occur then a selection effect which is very likely that banks with the biggest problems in lack of liquidity to pay the highest interest. To avoid this adverse selection, it is preferable for the insurer to charge differentiated insurance

premiums higher for banks with weak risk management so that there is an explicit penalty for them.

In Romania, banks faced every factor of financial instability in a context of general instability as a result of the transition process. The transition meant for the Romanian banks to amend statutes, the legal framework of operation, freedom in the choice of internal and external partners, competition from other financial institutions (investment funds) and other banks, reducing direct refinancing by the central bank, permanent change of rules by NBR prudential and financial deterioration of most large customers. In these circumstances, the bank management, implementation of appropriate policies for risk management becomes a necessity, as the uptake by employees of new techniques and tools of risk management.

In the banking sector growth has become an essential attribute of bank performance. It is not an end in itself but is required for profitable investments in new technologies, possible only in conditions of “mass production”. The growth in the banking sector has two components: growth in traditional banking services (loans to customers, make transfers, property management) and growth in the new banking services (cash management, capital market operations, computer and information services, insurance). It is characterized by the competitive context and results in the financial institution providing a wide range of services. Some of these services are new and the staff is inexperienced and others involving the operation of the markets where banks are not familiar with, fact that make it seem like the staff lacks professionalism.

Therefore the image of banks in financial markets tends to be a loss, because they risk being treated by specialists as a conglomerate formed partnership to chance, run by people unaware of the new areas and unconscious net gain or specific risks.

Under a management right, increasing operations in two large areas – traditional services and new services – should have a synergistic effect. But losses incurred by some shareholders and the volatility of revenues are going to reduce the market value of banks, which is extremely expensive acquisition of additional capital (necessary for the general protection of the institution in terms of growth). Because communication with the public banks and even shareholders, in terms of bank risk management, is poor, the market tends to treat all banks equally. Bad management can affect several banks and public image of the other.

In conclusion, because the risks banks are a source of unexpected expenses, their proper management to stabilize revenue over time serves a shock damper. At the same time, strengthening the value of bank shares can

only be achieved through effective communication with financial markets and implementing appropriate risk management programs bank.

All banks and financial institutions must improve their understanding and practice of banking risk management to be able to successfully manage different product range. If the process of bank risk management and global management system is effective, then the bank will be successful. Banks can successfully manage the risks that banks recognize the strategic role of risk, if used paradigm for analysis and management to increase efficiency.

3. Credit risk management under Basel II

Banking crises have negative effects not only on major national economies of the countries where they are produced, but due to the growing interdependence caused by globalization, they even tend to contaminate and other economies, thus affecting global financial stability. For this reason, the national banking supervisory efforts have been made in a manner more pronounced in recent years by actions to improve the regulatory framework for banking internationally.

A first such agreement was drafted by the Basel Committee on banking regulations and supervisory practices (in short, the Basel Committee) since 1988. This agreement, as enshrined in the language bank Basel I, was meant to achieve a climate of fair competition among international banks by setting a minimum threshold level of 8% capital to asset weighted according to the degree of risk for each bank.

Compared to the previous agreement, Basel II brings the following key innovations:

- existence of a structure that is based on three pillars, which are: Pillar 1 - relating to rules on calculating the necessary capital, Pillar 2 - which refers to that played by supervisors, and Pillar 3 - relating to requirements more extended transparency models used by credit institutions to manage risks;
- a method of calculating capital requirements based on an increased sensitivity to risk, which emphasizes a greater extent on its risk measurement system of credit institutions;
- a wider recognition of risk mitigation instruments;
- introduction of additional capital requirements for operational risk.

Basel II brings changes in activity of banks and financial institutions, imposing mandatory capital requirements for banks' exposures. When a bank grants credit, it assumes a risk in its portfolio. To be a global event risk, throughout the bank and real time, it needs a good IT solution set, a set of

procedures, well trained people who know what to do when there are early warning signals. To collect and process all necessary information in real time, the bank requires a complex infrastructure, which, through diversity, entails a different type of risk, difficult to manage and quantify: the operational. While credit risk can be calculated, estimated, assessed for operational risk this is more difficult.

To calculate the necessary capital, Basel II proposes two different approaches:

a) The standard approach, which is similar to that proposed by Basel I, but using more refined weights. In addition to the previous agreement, this approach allows the use of derivatives to mitigate credit risk and reducing capital requirements.

In the standard approach, weights are given by type of state/institution credited according to their rating (Fisman, Love, 2004).

The main categories of debtors are:

- the States, including the central banks;
- the local authorities;
- the multilateral development banks;
- the banks;
- the corporates.

Table 1

The change in bank ratings (%)						
Debitor	Capital requirement					
	AAA la AA-	A+ la A-	BBB+ la BBB-	BB+ la B-	Below B-	Without rating
State	0	20	50	100	150	100
Banking operations (a) ⁽²⁾	20	50	100	100	150	100
Operation (2) (b) ⁽³⁾ , (c) ⁽⁴⁾	20 (20)	50 (20)	50 (20)	100 (50)	150 (150)	50 (20)
				BB+ la BB-	Sub BB-	
Corporates	20	50	100	150	150	100

Source: Moody's.

For retail credit exposure risk, the weight is 75%. Under Basel II, to be classified as retail, the exposure must be:

- on an natural person or conventional person;
- generated by a bank product, such as credit cards or consumer loans;
- to not exceed more than 0.2% of retail portfolio recognized as such by the supervisor;
- to not exceed one million euros for any consideration;
- the principles contained in Regulation no.14/2006⁽⁵⁾.

For exposure to mortgages, the capital requirement is 35%, substantially lower than the share of 50% of Basel I.

Standard approach relies heavily on external ratings given by external credit rating agencies recognized by the national supervisory institutions.

In terms of eligibility criteria for rating companies mention that they can be structured as follows:

- objectivity;
- independence;
- international access/transparency;
- transparency;
- resources;
- credibility.

Basel II recognizes the techniques for reducing credit risk through collateralisation, the guarantors are credit risk derivatives.

As regards collateral, there are allowed two ways of treating it. The simplest approach is similar to the Basel I risk that the share of credit risk is replaced with the share of collateral, which can not be less than 20%. The other approach, advanced to protect the bank against the price volatility of collateral, is based on the collateral price adjustment by applying the share of collateral that is provided by the supervisor or are calculated internally. Then the market value of collateral is deducted from the gross amount of credit granted, thereby achieving adjusted exposure is multiplied by the appropriate risk weight.

Thus for a collateralised transaction, the weight of exposure after risk reduction is calculated as follows:

$$E^* = \{0, [E \times (1 + H_e) - C \times (1 - H_c - H_{fx})]\}$$

where:

E^* – exposure value after risk mitigation procedure is - the current value of the exposure;

E – current exposure value;

H_e – haircut applied to such exposure;

C – the current value of collateral received;

H_c – collateral haircut that's applied;

H_{fx} – Haircut applied to reduce currency risk due to expression in different currency exposure and collateral.

When collateral is composed of a basket of assets, haircut's basket of assets is applied $H = \sum_i a_i \times H_i$, where a_i is the rate of the asset (measured in monetary units) in the cart and H_i - haircut that's applied to asset⁽⁶⁾.

Acceptable collateral under both approaches can be represented by:

- cash and deposits,
- securities rated at least BB-, issued by governments or public entities,
- securities issued by corporations that have ratings of at least BBB-,
- shares or debentures forming part of a leading indicator,
- gold.

In addition advanced approach supports actions that are not part of a main index but are traded on a principal market, bonds without rating issued by banks, collective investment securities and other mutual funds.

To use these types of collateral, a bank must meet standards relating to:

- legal certainty of the documentation used,
- the requirement that the assets used to reduce the risk to have a low correlation with loans whose risk is reduced,
- robust collateral management policies.

Proposals relating to guarantors and broaden the eligible collateral compensation balance sheet or the providers of credit risk derivatives contracts, the recognition of protection for credit risk provided by governments or banks with a risk weight lower than that of the debtor and other entities rated A - or higher. This last category includes the protection offered by its parent company, subsidiary or affiliate of the debtor when they have a risk weight lower than that of the debtor.

Similarly as for collateral, and for compensation there are determined haircut sites. Thus, the exposure obtained by use of a compensation agreement is:

$$E^* = \max\left\{0, \left[\left(\sum(E) - \sum(C)\right) + \sum(Es + Hs) + \sum(Efx \times Hfx)\right]\right\}$$

where:

E^* - exposure value after risk mitigation procedure;

E - current value of the exposure;

H_e - haircut applied to such exposure;

C - the value of collateral received;

E_s - the absolute value of the net position in a financial way;

H_s - haircut applied E_s ;

E_{fx} - absolute value of the net position in a currency different from the currency compensation;

H_{fx} - haircut applied to reduce currency risk.

As an alternative to the standard approach and to estimation their share for collateral (advanced approach), banks may use VaR method (Value-at-Risk) to reflect the volatility exposure and collateral for repurchase agreements covered by bilateral netting contracts.

The use of VaR is allowed only for banks whose internal market risk models have been recognized by the supervisory authority under the Amendment on market risk. Banks that have not received such a permission may require a separate recommendation by the institution to monitor market risk models for REPO. These models will be allowed only if the bank can prove the quality of the data model used for testing its results over a period of at least one year.

In this context, exposure of banks using internal models for market risk is:

$$E^* = \max\left\{0, \left[\sum(E) - \sum(C)\right] + multiplier \times result_model_VaR\right\}$$

In calculating capital requirements banks will use the results of VaR for the previous business day.

In the securities and derivative contracts on credit risk, operational requirements are the requirements to be met:

- they must be a derivative claim on the seller of protection and must explicitly addresses the exposure (or group of exposures) specifically so that protection should be clearly defined and unquestionable,
- the contract must be irrevocable,
- the contract should not have any clause specifying that the protection seller may unilaterally waive the protection of credit risk or to increase the cost of insurance protection if credit quality deteriorates,
- the contract is unconditional,
- the contract has no clause to allow the protection seller to delay payment of compensation in case of credit event.

If protection is denominated in another currency, its value will be reduced by applying a haircut, as follows:

$$G_A = G \times (1 / H_{FX})$$

where:

G - the nominal protection for credit risk;

H_{FX} - haircut applied;

G_A - actual value of the collateral.

If there are differences in maturity between the instrument that provides protection for credit risk and credit instruments, the protection for credit risk will be adjusted as follows:

$$P_a = P \times \frac{t - 0.25}{T - 0.25}$$

where:

P_a - value for credit risk protection adjusted for maturity differences;

P - value for credit risk protection adjusted for any haircut;

t - min (T, residual maturity of the contract for protection) in years;

T - min (5, residual maturity of the exposure to credit risk) in years.

b) Approach based on internally generated ratings:

- Methodology based on internal ratings based (Foundation Internal Rating Based (IRB) approach), which allows a bank to use their own rating system, inclusively using their own calculations on the probabilities of entry in default (PD), but losses when the counterparties to default (LGD) are provided by the supervisory institution.
- methodology based on advanced internal ratings (IRB advanced approach), in which banks calculate their capital requirements on their models, validated by the institution of monitoring, inclusively calculations on the probability of entry in default (PD) and loss if the counterparty enters into default (LGD).

Regarding *Pillar 1*, it allows banks to calculate credit risk as to choose, as we noted above, between three options, with increasing degrees of sophistication: the standard approach, which uses external ratings, and ratings based on two options internal: the basic approach and advanced approach. For both options, to grant approval of internal models must have approval ratings of supervisors.

Even in the standard approach there are significant differences compared to Basel I. The most important is the additional penalties for providing loans to entities with lower ratings. Thus, if the maximum capital requirement of Basel I was 100% of exposure to a particular entity, the Basel II ratings below B-weighting exposures is made with 150%, ie for each exposure of 100 units money to such entities, the credit institution must have 150 units of capital. Thus, exposure of credit institutions is discouraged from entities that have a high credit risk.

In case of approaches based on internal ratings, credit institutions use indicators such as probability of default (PD - Probability of default) and loss due to default (LGD - loss given default) to calculate capital requirements for each rating category given to its borrowers. For the basic approach, LGD is determined by the supervisory authority, while for advanced approach, LGD is determined by the credit institution, based on historical performance of its customers.

With regard to market risk, Basel II does not bring news to the previous agreement. Remain the standardized version, based on evidence provided by the supervisor, and that one based on internal models, respectively of VaR (Value at Risk).

Finally, as noted above, the new agreement provides for supplementing the capital requirements for credit institutions to accommodate operational risk. It is defined as potential loss arising from the deficiencies of internal systems, human activity and external shocks. Again Basel II provides three approaches for calculating minimum capital requirements, the basic indicator approach, standardized way and advanced internal measurement method, with progressive degrees of complexity.

Pillar 2 sets out basic principles for the supervision of the implementation of Basel II. These principles are broadly the following:

- Risk assessment is the obligation of the credit institution;
- Oversight of internal models to assess the institution's credit risk management strategy and the calculation of minimum capital requirements;
- At any time, the credit institution must have a level of capital above the minimum requirements;

The supervisory authority may order to any credit institution to increase its capital when it considers that the risks to which the bank is exposed are not adequately covered by existing capital.

One of the problems still considered insufficiently clarified in connection with the second pillar is the relationship between authorities in the country of origin and destination of bank capital (home - host country), in other words, the question of the relationship between the supervisory authority in the country where the parent bank is and the country where the subsidiary it.

The issue is critically important the more current, since some of the central and eastern Europe, including Romania, have banking systems dominated by subsidiaries of banks in Western Europe. The essence of this problem is given by the asymmetry of risk transfer mechanism. Thus, any major difficulties that would face the parent bank is very likely that would quickly send subsidiary, while a subsidiary issues would have a much lower impact on the bank's parent, if only because of financial power of different entities.

In these circumstances it is necessary to clarify, first, the extent of exchange of information between home and host supervisors, so that host country authorities can take timely steps for safety in the event of problems for the parent bank. On the other hand, it must be clarified to whom belongs the role of lender of last resort in case of problems induced by the parent bank in its subsidiaries in other countries.

In the *Pillar 3*, Basel approach is that market discipline is achieved and the pressure on players in the market - customers and other credit institutions - the banks make for a prudent conduct of risk management. For this pressure to be manifested, greater transparency is needed.

For this reason, credit institutions are required to provide both supervisors and the public detailed information on qualitative and quantitative risks assumed, capital and risk management policies and procedures. Requirements for providing information are particularly large as the banks that use more complex approaches for credit risk and operational.

4. Conclusions

This method allows banks to determine capital requirements for various exposures using their own estimates for some or all components of risk. These include, as we noted:

- probability of default (PD);
- loss given default (LGD -);
- behavior upon entry into the debtor's default (EAD - Exposure at default);
- the effective maturity of credit instruments (M - effective maturity).

Using their methodology for estimating these components of credit risk is subject to approval by the supervisory authority, and in some cases banks will have to use for one or more of the components of risk, values given by the supervisory authority.

Notes

- (1) According to Basel Committee on Banking Supervision, International Convergence of Capital Measurement and Capital Standards, A Revised Framework, Bank of International Settlements, June 2004.
- (2) (a) – the weights are based on the state ratings where the bank's head office.
- (3) (b) – the weights are based on the bank rating.
- (4) (c) – in parenthesis are presented the weights for the short term loans (less than 3 months).
- (5) According to Regulation of the National Bank of Romania (B.N.R.) no. 14/14.12.2006, concerning the treatment of credit risk by the credit institutions and investment companies following the Standard Approach published in the Official Gazette no. 1033bis/27.12.2006.
- (6) According to Regulation of the National Bank of Romania (B.N.R.) no. 19/14.12.2006, concerning the treatment of credit risk mitigation used by credit institutions and investment companies, published in the Official Gazette no. 1034bis/27.12.2006.

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A Historical Approach of the Population Role in the Economic Development (Ancient period – the nineteenth century)

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Abstract. *The population is the general premise of existence, of dynamics and of structure working factor. In this paper, the population is considered, first, as a support of primary production and creative factor – work which is the recipient and consumer of the results of any economic activity, and on the other hand, the basic relationship between the ultimate goal of production and the means used to achieve it. There are presented interrelationship between demographic and socio-economic processes, since antiquity until the nineteenth century.*

Keywords: demography; the population – background of the work as main production factor; the population – final purpose of any economic activity; work; economic development.

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Since forever, the demography and socio-economic activities were closely existentially related. Thus, no specialists, no socio-economic school has denied links between economic and demographic processes. Moreover, defining work, production, economy in general as the only specific human activities, those demographic and economic specialists are perceived as two indestructible sides.

The phrase “*population – development*” is a relatively recent creation, although the concerns of specialists in understanding and assessing the relationship between population and other systems of society – territory, food, agriculture, regime etc. – are old, as confirmed by the history of philosophical and social thinking.

The population is *a general assumption of the existence*, dynamics and structure of the employment factor. By the role that work has in all resources and production factors, the population is *the primary component of any society*, and hence of any economy. The population is the indispensable condition of the existence of the society itself, a population whose economic role is reflected in the fact that it is a support of the primary production and active-creator and which is the recipient and the consumer of virtually any economic activity.

Moreover, *the satisfaction of the human needs*, so of the population, is *the general goal, the ultimate social and economic activities*, while production and distribution of goods are only practical means ensuring that necessary to achieve stated purpose. The entire population, on the one hand and the active and employed population, on the other hand, is at the base of the ultimate goal of the relationship between production and the means used to achieve it.

The optical approach and analysis of the population-economy interdependencies were different over time, in some cases even opposite, depending on the era, the design method of research analysts and socio-economic phenomena.

Plato, Aristotle and Thomas D’Aquino on the role of people in the society and in the economy

Interdependencies between economic development and population dynamics – those two distinct processes- have been researched and reflected as such since antiquity. The great Greek philosopher Plato (427-347 BC) examined and assessed these relationships in context and in light of the Greek cities of the time. Obviously, the explanations that the Greek philosopher left the posterity to bear the seal of the slave era he lived in and he created.

Worried about finding the optimal size of the number of people who lived in a city, Plato makes the distinction between the ideal city (ideal state), the real city (the real state) and the possible city (the possible state), for each of these models of cities the Greek philosopher established a special work. In the work

on the perfect city, *Plato surprised size relationship between the number of citizens (constant size – 5,040) and the ability to produce of the city which was the basis for its assessment as ideal*. A perfect city, should, in Plato's view, combine the four great virtues: wisdom, courage, temperance, justice (Popescu, 1997, p. 31).

In Plato's view, the two dominant castes – the philosophers and the guardians – must work together to organize their rule on farmers, craftsmen and slaves.

Criticizing Plato's philosophy on the role of men in the perfect city, Aristotle (384-322 BC) considered that man is totally in the real world. It differs from all other beings because he is rational.

In Aristotle's conception, the work was incompatible with the real purpose of human life. This contradiction is resolved by the laws of nature themselves. In fact, people are different from them in kind. Those with lower intellectual qualities are doomed to become slaves. So, the nature dictates to the society the right to entrust only to slave the job to produce goods in crop production and livestock breeding, fishing and hunting, and subordinate their craft through various activities. The intellectually gifted ones were intended, according to the same natural laws, to lead the less gifted ones.

Thus, *in Aristotle's conception the healthy city is defined by some natural relationship between population and structure, on the one hand, and economics and its forms, on the other*. What "got out" of the natural laws affected the healthy city status. In order to delineate what was considered to be healthy which was not healthy, the Greek philosopher used the concepts of *distributive and commutative justice*. The links between these two types of justice with equality and legality were likely to reveal the relationship between population and economy at a certain time and in their becoming.

The importance of knowing two thinking titans of the conceptions of ancient Greece is that the modern social science begins their analytical discourse based on their ideas. After 13 centuries of *Dark Middle Ages* – noted an expert in the field – issues of population and economy began to undergo extensive investigations, various modern authors finding and starting to build a specific affiliation of ideas, whether based on Plato's conception or on Aristotle's conception.

The long period of decline of the Greco-Roman civilizations ended towards the end of XIII century. Amid the economic development and the discovery of the works of the ancient thinkers, the concerns on the study of economic activities in their natural connection (naturally) with demographic processes are reconsidered. The beginning of these concerns was marked by the great thinker who was Thomas D'Aquino (1225–1274).

Making an interesting synthesis between Aristotle's philosophy and his doctrine, he managed to give a rationalist tinge on the Catholic philosophy.

In Th. D'Aquino conception, ensuring the distributive justice is for the leaders, which do the distribution of goods produced among their subordinates. This distribution requires consideration of social ranks; each rank receives a share proportionate to the importance of each rank.

The second type of justice, the commutative, is dependent on the virtue (the virtues) of the individual. This is the person's ability to adapt to change, manage goods received in the distributive justice.

Overall, *the Thomist doctrine* was of great significance. Some exegetes of Thomas D'Aquino believe its doctrine of a particular greatness. In essence, by this work it was considered the *realization of the Christian ideal in a society where the economy began to impose itself as an essential social sector*, which began to be subjected to special concerns.

The prevention of traders from abusing the scarcity of goods (rare occurred on account of stronger growth of human needs) and preventing the consequences of the rarity of capital formed a set of principles designed to support business expansion and a certain accumulation of capital.

The classics of political economy about the relationship population-employment-development in the Capitalism of the eighteenth and nineteenth century

With the industrial revolution, addressing and resolving issues related to the interdependence between population and economy changed substantially. However, in the context of establishment of economic science the optic long prevailed that the two components of social life are autonomous, each of which is forming with the other one exogenous variable.

Adam Smith (1723-1790) *puts the production on the first place*, but only in some particular form: agricultural production, production of precious metals, but in all its forms, placing the spotlight the industry, part explicable given the period in which he lived.

Adam Smith sometimes sees work not as a normal activity of life, as a positive creative activity, but as a sacrifice that the man makes from rest, from freedom and from happiness. People engage in toil and trouble relating to work to enjoy the necessary, useful and pleasant thing for humans. The author considers that it is understood by itself the people's trying to reduce the amount of time and effort related work so that workers will try, naturally, to find simpler and easier ways to carry out work. This leads to invention and improvement of machinery and division of labor as a natural and necessary process.

As a result of division of labor, people become more dependent on each other in ensuring the necessary and useful life. Their work becomes more specialized and skilled, less time consuming and therefore more effective. The benefits of the introduction of machinery for the performance of intensive physical character work previously performed by humans stimulates the investment and hence the productivity growth. This is considered as an asset for the whole society but results from the cumulative effort of individual workers' performance.

We also have to take into account, of course, the different degrees of exertion and skill. It may be more work in one hours of hard work only two hours of light activity, or in one hour of work in a profession that requires ten years of work to learn it than in a month of activity in an usual and easy to learn occupation (Smith, 1962, p. 25).

Starting from Smith's ideas, David Ricardo (1772-1823) continues to deepen the theory of value based on work, bringing far more complex issues in November. In his view, *the value is essentially different from wealth, because the value is independent of the abundance, but is dependent of the difficulty or ease of production. A million people's work in factories will always produce the same amount, but will not always produce the same wealth. By the invention of cars, by improving the skill, a better division of labor or by discovering new markets where trade can be made on advantageous terms, one million people can produce double or triple the amount of wealth ... and thus will not add to the value because the value of a thing increases or decreases according to its ease or difficulty of producing, or, in other words, according to the work done for its production* (Ricardo, 1962, p. 112). From its exposure results that the amount is regarded as a product of labor, while wealth is the result of collaboration between man and nature and the means of production which they use.

Unlike Smith, which reduces the value of the goods only to direct labor expended (live work) to its production, Ricardo states that instruments, working tools do not create value, but as they are consumed, they are transferred to the product.

In Robert Thomas Malthus (1776-1834) view, the creation of wealth requires human effort, but not any work creates wealth. Wealth is created by productive labor. The productive work can be estimated by the quantity and value of the subjected product (The Team Department of Communication and Economic Doctrines, 2001, p. 65).

Malthus recognized the merit of Ricardo to show that the value, as social substance, is created by work, while wealth is the result of the collaboration between man and nature, helped by the capital. He joins the Ricardian theory of considering work as a source of value of goods. Assuming that working capital

is considered acquired, Malthus distinguishes between the constant capital, capital called “the one that orders” and variable capital, the sense was, “capital that is controlled”.

Studying the realities of developed economic countries in the late eighteenth century and the beginning of the nineteenth century, Thomas Malthus made a law of the population of which essence is: “the increase of revenue on economic development increases birth, and when this growth occurs ahead the intensity of economic development the revenue declines.” (Malthus, 1992, p. 124).

By formulating this law it was implemented the quality of exogenous variable of both the economy to the population and the population to the economy. First, birth is seen as directly and unilaterally determined by the size and dynamics of the income. Then, the increase of birth rate compared with the economic results automatically lead to lower family income (wages). In other words, Th. Malthus expected that production of consumer goods increased in arithmetical progression, while the population grows in geometric progression. The general conclusion which Malthus made was that it can reach a great crisis if action is taken to stop the population growth (Malthus, 1992, p. 256).

According to Th. Malthus, *the population growth with a relatively high rate is an obstacle to growth*. A positive population growth means more claims against all systems of society: health, education, economic, environmental, habitat. The economy in turn must respond to these new requests, usually by increasing production (not to reduce the living standard of population).

However, a contemporary critic of Malthus said: “God sent not only a mouth in addition to be fed, but a pair of arms that will work.” Of course, additional workforce training needs skills, talents to work. So, demographic investment must be done, as Sauvy said, investment will be recovered in less or more time, depending on the level of labor productivity.

According to opinion of the Romanian demographer Vladimir Trebici, statistical documentation of Th. Malthus was quite modest, given that the first census was held in England in 1801. In his opinion, to answer the question *whether it is positive or negative the population growth in relation to social economic objectives, the analysis is required to take into account the time, that country's characteristics, cultural models*.

The general statistical observations show that periods of economic prosperity have been accompanied by declining birth rates. Economic and demographic history have seen situations much more varied than that surprised by Thomas Malthus in the capitalist law that bears his name. The meanings and dimensions of the demographic and economic dynamics were different not only from one country to another, but from one group of countries to another. If there are analyzed and countries left behind in economic too, the demographic-economic

picture with the changes appears in its full complexity. Moreover, even in the same country these relations have evolved varied from one period to another.

John Stuart Mill (1806-1873) considered work an important production factor, creator of utility fixed and embedded in material objects. Only the labor which is involved in creating utilities is productive. The other work, while useful, falls into the category of non-productive. Social and natural production conditions are materialized through the joint action of the three production factors: labor, nature and capital.

The accumulated stock of capital is called capital; in such way capital is defined as part of the wealth gained through work and used in the production and reproduction of wealth. The size and use of capital may expand or reduce the creation of wealth, and his work is to be used and not preserved. The function of the capital in production *is the function of work as an indirect form* through the means and objectives as it is materialized (Ivanciuc, 1990, pp. 37-38).

Karl Marx: the productive labor and surplus value, the capitalist law of population

Karl Marx (1818-1883) analyzes the capitalism as a generalized commodity production, in which human labor itself became a commodity. In Marx's conception, the work does not necessarily mean direct labor; it can be live work that is distributed on many goods and labor incorporated into the manufacture of a car, which the car slowly forwards it on to the products.

Marx follows Ricardo in his view on the value of merchandise. Therefore, he argues that all goods are valued in relation to the direct or indirect employment that it is included and in relation to the amount of necessary social work incorporated into the merchandise.

According to the Marxist conception, labor, the one who works productively, is the main force of the company. This assessment takes into account the fact that absolutely all means of work, no matter how sophisticated would be dead as long as they are not revived by man.

Obviously, between the development and use of material factors of production and use of work there are multiple necessary links, resulting in the need of general progress. Despite these multiple interdependent links, each of the processes has shown determination and specific events. In this respect Karl Marx postulated: "The reproduction of labor force – force that must continually enter the structure of capital as a means of recovery (production added-value) and can not be freed from him – whose subordination to capital is only disguised by the changing of individual capitalists who are selling it, it is actually a time of reproduction of capital itself" (Marx, 1966, pp. 623-624).

In Marxist vision it is an essential difference between normal reproduction of labor under a social report and normal reproduction in the capitalist sense. The normal reproduction of labor, as an overall process, would also involve quantitative changes, structural and quality ones to be in relation to the socio-economic and technical progress, with the natural coordinates of demographic phenomena, namely to the socio-cultural and national conditions from the reference country, so in each country.

But, the capital relationship – showed Marxists – imposed “another normal” in the reproduction of labor. The most significant manifestations of misconduct of “normal capitalism” of training and use of labor from “the general normal” were treated and appreciated by the Marxists through the following: chronic and mass unemployment, large asymmetries between the necessary-historical and supported structures, selfishly promoted by the capital; the absence of national programs for training the workforce, the absence of ways and means of mixing the individual and the social overall process of training and use of labor.

These demo-economic imbalances in the conduct of reproduction of work force by their socio-political importance – supports Marxism – far outweighs the labor market, since the bourgeois leaders call them with all seriousness, “public enemies” of capitalism itself.

The capitalist law of population is the theoretical generalization of resonance with the essence of Marxism addresses and examines the unemployment, its objective determination.

Karl Marx formulated the public law as it follows, “once with the expansion of production scale and the number of workers in service, with the development of productive force of their work, with expansion and growth of all resources of wealth, extent the proportions to which the attraction of more workers by Capital is linked to a higher rejection of them. This is a law of population similar to the capitalistic production model.”

„But if a working overpopulation – emphasizes Marx – is the necessary product of accumulation or development of capital-based wealth, this overpopulation becomes in turn a lever of capitalist accumulation, even a condition of existence of the capitalist mode of production” (Marx, 1966, p. 641). It is noted in this case that the economic component is autonomous and it is an exogenous variable to the population.

The preparatory elements for defining the capitalist law of population movements consist of the accumulation of capital, where the size and structure of the accumulation appear as independent variables, while their labor movements, movements of variable capital (with which is bought the goods of the workforce) are a dependent variable. More specifically, Marx stated: “It is not in any way about a relationship between two quantities independent of each

other, ie the size of capital on the one hand, the number of working population on the other hand. Ultimately, it's not just the relationship between unpaid and paid work of the same working population."

Following this thesis, in the Marxist thinking it is paid an essential attention to the ratio between the newly created value of only productive labor, the value of labor work and the added-value.

The workforce is presented primarily as a defining biophysical human structure as the primary source of physical and intellectual energy. But the use of labor involved a social, moral and historical side, whose share has continually increased; the occurrence of labor goods was a corollary of the process. Like any other merchandise, labor has two factors: the value and the use value.

The value of labor is determined by the working time required for the production and reproduction of this article so specific and essential part of capitalism. The lower limit or minimum limit value is the amount of labor, physically indispensable. If the price of labor (wages) falls to this minimum level, it falls below its value, because it excluded the historical-mental element.

Starting from their fundamental thesis of the value and the only source of it – the productive work – Marxists conclude that the use value of labor is that the employed labor force creates both value of its own (which is the historical and moral element) and a surplus of value – added value for capitalists. The employed labor is the active subject of production of the process of over-value, of the recovery of capital.

On the basis of this mode of treatment mechanisms and production of value and over-value, Karl Marx formulates his general political conclusion: capitalism must be replaced by revolutionary means, by the outbreak of the proletarian revolution in advanced capitalist countries (matured in the forms of exploitation of the proletariat, but also in the organization of the exploited ones).

The history of the last and a half century, in particular, the experience of countries which have opted for liquidation of capitalism and building socialism Marxist revealed exaggerations regarding their findings and of political and ideological recommendations. Capitalism has evolved and developed in other way than as envisaged by Marx-Engels-Lenin and even Marxists of the twentieth century.

However, some fundamental thesis and ideas propagated by Marxist thinking on the formation and use of labor have been incorporated in what specialists called heterodox theory of economic growth and development at the turn of current centuries and millennia.

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Since the second half of the nineteenth century, *with the emergence of two new social sciences – sociology and demography – social life appears as a result of human will, able to act on society, to transform and to change it radically*. This is not considered a result of natural or divine order.

On this methodological-philosophical background, over the last centuries it was shaped and consolidated a new optics regarding the social processes and relations between them. Nowadays, it is considered that the social, demographic and economic processes are not dependent to each other, but on the contrary, the relations between these processes are reciprocal, of interdependence. Therefore, their analysis requires the successive passage of each process group either by the position of dependent variable, or by the independent variable towards each other. Thus, *the population is a factor of the economy as a means to achieve the ultimate goal of any activity (as producer), but also an effect (as consumer)*.

In the twentieth century, especially in the second half of this century, the optical approaches to the relationship between population and economy (both seen in dynamics) have multiplied, their views on it becoming not only more diverse but also opposite. What characterizes them is *the turn of the population in endogenous factor* (the internal, intrinsic side) of the economic development (economic growth), factor which, in turn, is determined by economic processes.

The dual position of the population in the demo-economic system – as a main production factor and as virtual destination of the goods produced – is a strong case for assessing the demographic factor as endogenous variable of the economic growth and development.

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The Liability of the Employer and the Liability of the Employees between Civil Law and Labour Law

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Abstract. *The working relationships based on the individual labour contract have an unprecedented aspect in civil law, namely, inequity of parts during the performance of the contract. This inequity is transposed in theoretical and applicative plan by the existence of the subordination report between the employer and employee. The lack of balance of the forces between the two parts of the contract constituted the necessary element for the birth of the new law branch which, by its settlements, to compensate this drawback. Though, in matter of liability, this “law of inequity” does not distinguish as a creator of new and independent institutions from “the general law”, apparently confining only at the removing or compensating the premises of the parts inequity. Thus, the Romanian labour law create a specific institution named patrimonial liability which involve applicable rules in the legal relationship arise from the individual labour contract that represent an exception from the common rules of the civil liability but does not completely delimit from it and using it as a decipherer resource of its elements and as supplement resource.*

The patrimonial liability does not exclude in all the situations the co-existence of other forms of civil, contravention or criminal liability if the necessary elements for their incidence occur.

Keywords: liability; employer; employee; labour law; civil law; patrimonial liability; civil liability; contract.

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Introduction

The terminology used in the matter of the liability specific to the labour law has a technical character strictly defined by the Labour Code, Law no. 53/2003⁽¹⁾, and by its related laws; therefore I consider that is necessary to define the essential terms in this way:

1. We define the individual labour contract as the agreement of the will between the employee and the employer by which, in exchange of the wage payment, the first obliges oneself to perform the labour for and under the authority of the second. Art. 10 of the Labour Code defines the individual labour contract as the contract on the basis of which an individual person, named employee, obliges himself to perform the labour for and under the employer's authority, individual or legal person, in exchange of a remuneration named wage.
2. The employer is defined by the Labour Code in the art. 14: "(1) In the meaning of the present code, by employer is understood the individual or legal person which can, according to the law, to employ labour force based on individual labour contract. (2) The legal person can close the individual labour contract as employer from the moment of gaining legal personality. (3) The individual person gains the capacity to close individual labour contract as employer from the moment of gaining the legal capacity⁽²⁾. Taking into account also the legal provisions of art. 230 of Labour Code we specify that "the owner, named in the present code employer, is the legal person registered or an authorized individual person according to the law, which administrates and utilizes the capital, regardless its nature, with the purpose of profit obtained in competing conditions and which employ wage labour".
3. The wage-earner or employee is defined as being that individual person which in the basis of an individual labour contract is obliged to perform labour for and under the authority of an employer, individual or legal person, in exchange of a remuneration named wage⁽³⁾.
The labour law separates from the big branch of civil law as a necessity of new times that evince increasingly the equality of the parts in the legal report. Either this equality is initially related only to the equality among peoples or subsequently is specifically related to its area of settlements.
4. The contractual civil liability represents the debtor's obligation duty arisen from a contract to repair the prejudice caused to its creditor by the fact of non-performing *lato sensu* the due service. By non-performing *lato sensu* the obligation is understood its delayed performing, the inadequate

performance or the non-performance itself, complete or partial (Pop, 1998, p. 177).

5. The mutual patrimonial liability of the parts of the labour legal report and the employer and employee, respectively, results from the individual labour contract, has a remedial character and it is based on “rules and principles of the contractual civil liability”, accordingly to art. 269 paragraph 1 and art. 270 paragraph 1 of Labour Code. The general rules of this liability are those from the common law which rules the contractual civil liability to those adding the specific rules contained in Labour Code (Ștefănescu, 2007, p. 480). By inserting those articles, 269 and 270, the lawgiver removed the old “material liability” settled by the former Labour Code, which, we can state, it was a liability different from the contractual civil one.

Therefore devolve upon the employer a liability with remedial character based on the rules of the contractual civil liability but different from it by the particularities of the employment relationship specificity. We can state that this type of liability represents just a variety of contractual civil liability, in both situations the prejudice being caused by the violation of an obligation assumed by contract.

The patrimonial liability of the employer or the employee singularizes by the following elements:

1. Can result only in the presence of a valid individual labour contract closed, therefore being a contractual civil liability with some exceptions⁽⁴⁾;
2. It is an individual liability, can arise only in the employer’s task or guilty employee, in connection with performing the individual labour contract;
3. The solidarity of the parts found guilty is not accepted and in situations in which at the producing of the prejudice have participated more persons, the remedial obligations of the prejudice what devolve upon each are conjunctional, sometimes subsidiary and common, but not solidary (jointly)⁽⁵⁾;
4. Is a complete liability which cover both the actual produced damage (*damnum emergens*) and the unfulfilled benefit (*lucrum cessans*); both the employer and the employee answer only for the caused prejudice which was appointed or predictable in the moment of closing the individual labour contract, except the severe guilt assimilated to fraud (according to art. 1085 of Civil Code), when they will answer also for the unpredictable prejudice (Moțiu, 2009, p. 352);

5. The mend of the prejudice is accomplished by pecuniary equivalent. In case of the employer liability there are no exceptions from this rule, but, in case of the employee there are, beside the situation in which the prejudice is recovered by wage restraining and exceptions⁽⁶⁾;
6. As regards the presumption of guilt of one of the parts, matter which the Labour Code does not settle specifically, we can state that if such presumption can not be opposed to the employee⁽⁷⁾, because of the fact that he has a duty of best efforts, similar presumption can be opposed to the employer because of the fact that he has a duty to achieve specific results. This relative presumption can be turned over by the employer by proving the fact that his obligations didn't fulfil because of the non-attributable fact.
7. In case of disagreement of the parts over the existence and extent of the liability, competent court is called to establish these aspects.
8. Judicial enforcement has a limited character regarding the patrimonial liability of the employee⁽⁸⁾ and it is unlimited regarding the patrimonial liability of the employer, there are no legal restrictions.
9. The clauses of aggravation of the employee are purposefully forbidden by the legal stipulations.
10. Alongside the clauses of remedial non-liability from civil law is also frame the one regarding the normal risk of the employment, according to art. 270 paragraph 2 of Labour Code.

The specificity of the patrimonial liability of the employer toward the employees

According to art. 269 of Labour Code the employer is obliged, based on the rules and principles of the contractual civil liability, to compensate the employee if he suffered a material or moral prejudice because of employer's guilt during the fulfilment of his employment duties or related to the employment. If the employer refuses to compensate the employee, the later can address a complaint to competent courts. The employer which pays the compensation will recover the appropriate amount from the employee guilty of causing the damage, in accordance with article 270 and follow-up.

Being a particular application of contractual civil liability for the mobilization of the employer liability towards his employees, all the terms of the contractual liability must be fulfilled, regarding the illicit act, prejudice, causal relationship between the wrongful act and prejudice, employer's guilt.

The remedy of the prejudice caused by the employer to the employee must be complete, so the employer answer for the material or moral prejudice; for the actual damage and for the non-accomplished benefit; for the predictable prejudice or which can be predictable at the moment of closing the individual labour contract, except the severe guilt (employer's fraud), for a complete or partial non-performance, an inadequate or delayed performance of his duties.

In the same time, towards the requirement of the complete remedy of the prejudice, the employer is obliged to pay the owed compensation as well as to pay the legal interest (according to art. 1088 of Civil Code), from the day of placing the request of the proceeding (date from which is considered in default, according to general rules).

The employer answer for the certain prejudice caused to employee (whose existence is sure and extend can be established), but not for the possible or future prejudices. Expressly, although we are on the contractual field, where the remedy by pecuniary equivalent of the non-patrimonial prejudices has a small area of application (i.e. in the contracts of public conveyance, of copyright and inventor rights exploitation), towards the stipulations of the article I of the Law no. 237/2007⁽⁹⁾, we must ascertain that the employer it is incumbent to remedy totally also the non-patrimonial prejudices, to the extent that occurred to the employee.

The most common situation that raises the issue of the employer's liability towards his employee can occur when:

- by court order is cancelled the decision of employee dismissal prepared by the employer, the later being obliged to pay compensations;
- the employee is prevented in any form to work;
- found criminal innocence of the person suspended from office and its compensation is due;
- the wage is not paid at the terms and in the manner agreed or take place unjustified delays regarding the payment of owed wage accordingly to the art. 161 paragraph 4 of Labour Code;
- the holiday entitlement and the right to the breaks of the employee, considered natural during working is not respected;
- the employee is dispossessed of the working equipment or his personal equipment/things because of the employer's lack of proper security measurements;
- the necessary documents which arise from and certified his quality of employee are not released to the employee, followed by the generation of some prejudices in his patrimony (i.e. the impossibility to take a job at other employer or to contract loans or bank credits) etc.

Constitute clauses of contractual non-liability of the employer the ones existing also in the common law, force majeure and unforeseeable circumstances, respectively, specifying that, in principle, in matter of contractual civil liability does not exist differences of the effect between them. If the employer proves that non-fulfilment of his duties, according to the law and those negotiate with the employee, is due to the force majeure or fortuit event, the condition of the liability regarding the causality between the illicit act and the damaged caused is no longer met, in which case the employer's liability can not established.

The effect produced aims the obligation ceasing whose performance become impossible as they act during the force majeure or the fortuitous event (since this is a contract of successive performance, force majeure and fortuitous event act temporarily).

We observe the discriminating character of the law in matter of patrimonial liability of the employer to its employees (to employer disadvantage) that settle the employer right to recover the due amount of the paid compensation from the employee responsible for the damage, according to art. 269 paragraph 3 of the Labour Code corroborated with the one which states that court orders pronounced in first instance by the tribunal are final and enforceable by the law, according to art. 289 of Labour Code on the one side, and the legal text which settles the employer right to make deductions by way of damage from the guilty employee (but only) if the employee's debt is certain, liquid and due, and it was found as such by final and irrevocable court decision, according to art. 164 paragraph 2 of Labour Code, on other side.

Thus, in the first case, to the extent that the employer wishes to recover the compensation paid from the employee responsible for the damage, he is obliged to follow the settled rules of art. 270 and next of the Labour Code, so the court order pronounced in first instance by tribunal is final and enforceable by law and can be put in judicial enforcement.

But, though the court decision, which found that the employee's duty is certain, liquid and due, is final, however the employer is obliged that the same court order to acquire also an irrevocable character, according to art. 164 paragraph 2 of the Labour Code.

The contradiction of the laws consists in the fact that, if in the first case, the court decision is final (and enforceable, according to art. 289 of Labour Code), the employer is obliged that the same court decision to be also irrevocable in order to be put in judicial enforcement, according to art. 164 paragraph 2 of Labour Code.

Concluding, the patrimonial liability is specific to Labour Code in Romania, it has particularities regarding some subjects qualified as exception

by the law. The provisions of the labour law are completed by the provisions of general law, civil law, and in some situations, such as judicial procedure, labour law step away leaving the general law to act.

Although the actual labour code complies with international and European law, we still have difficulties in applying it in some parts, but one thing is sure: the relationships between workers and their employers are strictly submitted to it. Protection of the employees is one of the major tasks of this legislation, so all the law regarding their rights are imperative, and cannot be removed or modified such as reducing or cancelling their rights.

Notes

- (1) Modified by Law no. 480/2003, Law no. 541/2003, OUG no. 65/2005, Law no. 241/2005, Law no. 371/2005, OUG no. 55/2006, Law nr. 94/2007, Law no. 237/2007, Law no. 202/2008, OUG no. 148/2008, Law no. 331/2009.
- (2) Modified by art. I section 2 of OUG no. 65/2005
- (3) The definition is criticisable considering the recommendation MLC no. 198/2006 of International Labour Organization that recommends to its members to establish a legal presumption of the existence of a labour relation as often as there are one or more characteristic signs of such relation.
- (4) According to Government Ordinance no. 121/1998 regarding the material liability of the military, published in MOF no. 328/29.08.1998, approved by Law no. 25/1999, published in MOF No. 34/28.01.1999, the liability of the civil employees from the structure of the military and militarized institutions (Ministry of National Defence, Romanian Intelligence Service, Romanian Foreign Intelligence Service, Protection and Guard Service, Gendarmerie, Special Telecommunication Service etc.), as well as their obligation to refund are based on the material liability rules, functioning by issuing the imputation decision and committing to the payment. The rules governing the military material liability form the special law on liability for this category of employees. Similarly, according to Law no. 384/2006 on the status of soldiers and volunteers subordinate officers, published in MOF no. 868/24.10.2006 and Government Ordinance no. 121/1998, approved by Law no. 25/1999, when they prejudice the military unit in the process of preparation for battle the liability is also material (and no patrimonial) in the limit of three net monthly payments, calculated from the date of damage finding.
- (5) According to Law no. 22/1969 on employment administrators, collateral and liability in connection with asset administration for operators, authorities and public institutions, published in BOF no. 132/18.11.1969, amended by Law no. 54/1994, published in MOF no. 181/15.07.1994, corroborated with art. 270 and following of Labour Code, the administrators' liability is patrimonial, in accordance with the applicable principles of contractual civil liability, liability customized with a number of specific rules under which their liability is solidary (not conjunct) and complete, according to art. 25-25, if alongside the administrator the employee, regardless the held position, is guilty of hiring, designation

or maintaining a person in the position of administrator without the observance of age, education and training conditions as well as the rules regarding the lack of criminal history is also patrimonial liable; is also solidary liable the one guilty of not complying with the collateral by the administrator, but the liability is limited only to the value of unincorporated collateral. Art. 30 of Law no. 22/1969 regulates the cases in which the pecuniary liability of the administrator is subsidiary, when the guilty one is liable, in the limits of the amount of the remaining damage not covered by its direct perpetrator, from the moment when its insolvency was found.

- (6) In the second situation there are two exceptions: when the employee received goods which didn't deserve, which can not repay in kind and when the individual labour contract of the employee ceases before he compensate the employer, cessation followed by not closing other individual labour contract (in first case, repay the pecuniary equivalent of goods, in second, the employer can be judicially enforce to cover the employer's prejudice, according to Civil Procedure Code).
- (7) Except the presumption of administrator's guilt, in case of missing goods.
- (8) The judicial enforcement is restricted, in the case of the employees, to maximum a third of monthly salary amount without exceeding half of it, according to art. 273 of Labour Code.
- (9) Law no. 237/2007, published in MOF no. 497/25.07.2007, amended the art. 269 paragraph 1 of Labour Code.

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